

Technical Manual
WATER SOFTENER

ProFlow

TABLE OF CONTENT & INSTALLATION RECORD

Table of content & Installation record.....	Page 2
Warning & Safety instructions.....	Page 3
Operating conditions & Requirements	Page 4
Assembly.....	Page 5
Installation.....	Page 7
Start-up.....	Page 9
Electronic control panel	Page 10
Maintenance.....	Page 17
Hydraulic flow diagrams.....	Page 18
Troubleshooting.....	Page 20
Electrical wiring diagrams	Page 22
Default parameter settings	Page 24
Composition overview	Page 25
Exploded view - Simplex Tempo/Eco	Page 26
Exploded view - Duplex Eco Alternating	Page 28
Exploded view - Duplex Eco Parallel	Page 30
Exploded view - Triplex Eco Parallel	Page 32
Exploded view - Timer head - Simplex	Page 34
Exploded view - Timer head - Duplex Alternating	Page 36
Exploded view - Timer head - Duplex/Triplex Parallel.....	Page 38
Exploded view - Valve body.....	Page 40
Technical data.....	Page 42

WARNING & SAFETY INSTRUCTIONS

- Before you begin the installation of the water softener, we advise you read and carefully follow the instructions contained in this manual. It contains important information about safety, installation, use and maintenance of the product. The actual system that you have received, may differ from the pictures/illustrations/descriptions in these Instructions.
- Failure to follow the instructions could cause personal injury or damage to the appliance or property. Only when installed, commissioned and serviced correctly, the water softener will offer you many years of trouble-free operation.
- The water softener is intended to 'soften' the water, meaning it will remove hardness minerals; it will not necessarily remove other contaminants present in the water. The water softener will not purify polluted water or make it safe to drink!
- Installation of the water softener should only be undertaken by a competent person, aware of the local codes in force. All plumbing and electrical connections must be done in accordance with local codes.
- Before setting up the water softener, make sure to check it for any externally visible damage; do not install or use when damaged.
- Use a hand truck to transport the water softener. To prevent accident or injury, do not hoist the water softener over your shoulder. Do not lay the water softener on its side.
- Keep these Instructions in a safe place and ensure that new users are familiar with the content.
- The water softener is designed and manufactured in accordance with current safety requirements and regulations. Incorrect repairs can result in unforeseen danger for the user, for which the manufacturer cannot be held responsible. Therefore repairs should only be undertaken by a competent technician, familiar and trained for this product.
- In respect of the environment, this water softener should be disposed of in accordance with Waste Electrical and Electronic Equipment requirements. Refer to national/local laws and codes for correct recycling of this water softener.

OPERATING CONDITIONS & REQUIREMENTS

- **OPERATING PRESSURE: min. 1,4 / max. 8,3 bar**
 - this system is configured to perform optimally at an operating pressure of 3 bar ($\pm\frac{1}{2}$ bar); in case of a lower or higher operating pressure the performance may be affected negatively!
 - check water pressure regularly.
 - take into account that night time water pressure may be considerably higher than day time water pressure.
 - install a pressure reducer ahead of the water softener if necessary.
- **OPERATING TEMPERATURE: min. 2 / max. 48 °C**
 - do not install the water softener in an environment where high ambient temperatures (e.g. unvented boiler house) or freezing temperatures can occur.
 - the water softener cannot be exposed to outdoor elements, such as direct sunlight or atmospheric precipitation.
 - do not install the water softener too close to a water heater; keep at least 3 m of piping between the outlet of the water softener and the inlet of the water heater; water heaters can sometimes transmit heat back down the cold pipe into the control valve; always install a check valve at the outlet of the water softener.
- **ELECTRICAL CONNECTION: 230V-50Hz**
 - this water softener only works on 24VAC; it is equipped with a 230/24V-50Hz transformer; always use it in combination with the supplied transformer.
 - make sure to plug the transformer into a power outlet, which is installed in a dry location, with the proper rating and over-current protection.

ASSEMBLY

CONTENT CHECK

- Actual parts that you have received, may differ from the pictures/illustrations in these Instructions!*
- For ease of transportation and installation, the softening resin is NOT loaded in the resin tank, but delivered in separate bags of 25 ltr; it must be loaded on-site, after positioning of the resin tank.*

Check the content of the system, using the Composition Overview at the end of these Instructions. Identify and lay-out the different components to facilitate the assembly.

DUPLEX ALTERNATING

A Duplex Eco **ALTERNATING** system consists of 2 Simplex Eco systems, that:

- are hydraulically installed **in parallel**,
- are electronically interconnected by means of an InterConnect cable,
- have a Normally Closed solenoid operated diaphragm valve (so called Service Valve) in the outlet of each Simplex system; this Service Valve is controlled by the electronic timer of the Simplex system and is activated during the service cycle to open the outlet of the respective Simplex system.

Both Simplex systems share 1 brine tank, that contains 2 brine valves!

During normal operation, only 1 of the 2 Simplex systems is in service, while the other one is regenerating or 'in standby'! As soon as the first Simplex system initiates a regeneration, the second system goes into service, guaranteeing uninterrupted supply of treated water. In case of a power failure, both Service Valves will be deactivated, meaning the outlet of both Simplex systems will be closed off, cutting off the water supply (potentially hard water!) to the application.

DUPLEX/TRIPLEX PARALLEL

A Duplex/Triplex Eco **PARALLEL** system consists of 2/3 Simplex Eco systems, that:

- are hydraulically installed **in parallel**,
- are electronically interconnected by means of an InterConnect cable,
- have a Normally Open solenoid operated diaphragm valve (so called Service Valve) in the outlet of each Simplex system; this Service Valve is controlled by the electronic timer of the Simplex system and is activated during the entire duration of the regeneration, to close-off the control valve's standard 'hard water bypass during regeneration'.

Furthermore, in case of a Duplex system, both Simplex systems share 1 brine tank, that contains 2 brine valves!

During normal operation, all Simplex systems are in service, doubling/tripling the service flow rate! When one of the Simplex systems initiates a regeneration, it immediately communicates its status to the other Simplex system(s) via the InterConnect cable(s), to make sure the other Simplex system(s) remain(s) in service, guaranteeing uninterrupted supply of treated water. In case of a power failure, all Service Valves will be deactivated, meaning the outlet of all Simplex

systems will be open, guaranteeing uninterrupted supply of water.

For correct assembly, repeat the different assembly steps, until all Simplex systems are assembled and positioned correctly.

For large installations, with an important need for treated water, 2 or more Duplex systems can easily be installed in parallel hydraulically, to double/triple/... the flow rate and softening capacity.

RESIN LOADING

1. Move the resin tank to the correct installation location; position it on a flat and level surface. Make sure to leave enough space for ease of service.
2. Position the riser assembly upright and centred in the resin tank; plug the top of the riser tube with a piece of tape or clean rag, to prevent resin from entering the tube.
3. Add water to the resin tank to a height of ± 30 cm from the bottom; this water will protect the bottom of the resin tank and the bottom distributor, during filling of the resin tank.
4. Place a funnel on the resin tank opening and fill the resin tank with resin; make sure the riser assembly remains centered in the resin tank.
5. Rinse the resin tank opening to remove any resin beads from the threaded section.
6. Unplug the top of the riser tube.

CONTROL VALVE

7. Make sure the O-ring in the riser insert and the tank O-ring (around the threaded section of the control valve) are in the correct position.
8. Screw the top distributor onto the control valve.
9. Lubricate the threaded section of the resin tank, the top of the riser tube and the tank O-ring of the control valve; use a silicon-based lubricant.
10. Lower the control valve straight down onto the riser tube, until the riser tube is correctly inserted in the riser insert; then push it down firmly and screw it onto the resin tank.

ASSEMBLY

BRINE TANK

Picture 1

11. Move the brine tank to the correct installation location; position it on a flat and level surface. Make sure to leave enough space for ease of service.
12. Remove the lid from the brine tank.
13. Run the polytube from the brine valve through the hole in the sidewall of the brine tank, to the outside of the brine tank.
14. Insert the polytube into the brine line compression connection on the control valve (1); tighten the nut.
15. Add water to the brine tank to a height of ± 10 cm from the bottom.
16. Add salt to the brine tank.
17. Install the lid on the brine tank.

INSTALLATION

INLET & OUTLET

- Check the water pressure at the place of installation of the water softener; it should never exceed 8,3 bar.
- In case of high concentration of impurities in the inlet water, we recommend the installation of a sediment filter, ahead of the water softener.
- We strongly recommend the use of flexible hoses to connect the water softener to the water distribution system; use hoses with a large diameter in order to limit the pressure loss.
- We strongly recommend the installation of a bypass system (not included with this product!) to isolate the water softener from the water distribution system in case of repairs. It allows to turn off the water to the water softener, while maintaining full-flow (untreated) water supply to the user.
- In case of a Duplex/Triplex system, we strongly recommend to keep the inlet and outlet plumbing to all Simplex systems as identical as possible; this way the total water flow is evenly spread over the different Simplex systems.

SIMPLEX with factory bypass (optional)

Picture 2

- ① = mains water supply (hard/untreated water)
- ② = inlet of water softener (untreated water)
- ③ = outlet of water softener (treated water)
- ④ = application (treated water)

1. Screw the factory bypass onto the in/out ports on the control valve (②&③); make sure to install the gasket seals. Tighten the nuts firmly by hand.
2. Screw the connection kit with nuts onto the factory bypass (①&④); make sure to install the gasket seals. Tighten the nuts firmly by hand.
3. Connect the mains water supply to the adaptor on the inlet port of the factory bypass (①).
4. Connect the application to the adaptor on the outlet port of the factory bypass (④).

SIMPLEX with 3-valve bypass (not included)

Picture 3

- ① = inlet of water softener (untreated water)
- ② = outlet of water softener (treated water)

1. Install the 3-valve bypass system.
2. Screw the connection kit with nuts onto the in/out ports on the control valve (①&②); make sure to install the gasket seals. Tighten the nuts firmly by hand.
3. Connect the IN valve of the 3-valve bypass system to the adaptor on the in port (①) of the control valve.
4. Connect the OUT valve of the 3-valve bypass system to the adaptor on the out port (②) of the control valve.
5. Connect the mains water supply to the inlet of the 3-valve bypass system.

6. Connect the application to the outlet of the 3-valve bypass system.

DUPLEX ALTERNATING/PARALLEL with multiple valve bypass (not included)

Picture 4

- ① = inlet of water softener (untreated water)
- ② = outlet of water softener (treated water)
- ③ = Service Valve

1. Install the multiple valve bypass system.
2. Screw the connection kit with nuts onto the in/out ports on the control valve (①&②); make sure to install the gasket seals. Tighten the nuts firmly by hand.
3. Screw the Service Valve (③) onto the adaptor (②) at the out port of the control valve; make sure to respect the flow direction (see indication arrow on the bottom of the Service Valve); use an appropriate sealant.
4. Connect the IN valve of the bypass system to the adaptor on the in port (①) of the control valve.
5. Connect the OUT valve of the bypass system to the Service Valve (③).
6. Repeat steps 2-5 for both Simplex systems.
7. Connect the mains water supply to the inlet of the multiple valve bypass system.
8. Connect the application to the outlet of the multiple valve bypass systems.

TRIPLEX PARALLEL with multiple valve bypass (not included)

Picture 5

- ① = inlet of water softener (untreated water)
- ② = outlet of water softener (treated water)
- ③ = Service Valve

1. Install the multiple valve bypass system.
2. Screw the connection kit with nuts onto the in/out ports on the control valve (①&②); make sure to install the gasket seals. Tighten the nuts firmly by hand.
3. Screw the Service Valve (③) onto the adaptor (②) at the out port of the control valve; make sure to respect the flow direction (see indication arrow on the bottom of the Service Valve); use an appropriate sealant.
4. Connect the IN valve of the bypass system to the adaptor on the in port (①) of the control valve.
5. Connect the OUT valve of the bypass system to the Service Valve (③).
6. Repeat steps 2-5 for all Simplex systems.
7. Connect the mains water supply to the inlet of the multiple valve bypass systems.
8. Connect the application to the outlet of the multiple valve bypass systems.

QUADPLEX PARALLEL (= 2 x DUPLEX) with multiple valve bypass (not included)

Picture 6

INSTALLATION

DRAIN

- We recommend the use of a stand pipe with air trap.*
- To prevent backflow from the sewerage system into the water softener, always install and use the included air gap with double hose barb, to connect the drain hoses to the sewerage system.*
- Always use separate drain hoses for the control valve(s) (evacuation of rinse water) and the brine tank's overflow(s).*
- Lay-out the drain hoses in such a way that pressure loss is minimized; avoid kinks and unnecessary elevations.*
- Make sure that the sewerage system is suitable for the rinse water flow rate of the water softener.*

Picture 7

1. Install the air gap to the sewerage system; it fits over a 32 mm pipe or inside a 40 mm pipe adaptor. Ensure a permanent and watertight connection.
2. Connect a 13 mm hose to the drain elbow of the control valve (1); secure it by means of a clamp.
3. Run the drain hose to the air gap and connect it to one of the hose barbs; secure it by means of a clamp. This drain line operates under pressure, so it may be installed higher than the water softener.
4. Connect a 13 mm hose to the overflow elbow on the brine tank; secure it by means of a clamp.
5. Run the drain hose to the air gap and connect it to the other hose barb. This drain line does NOT operate under pressure, so it may NOT be installed higher than the water softener.
6. *For Duplex:* repeat steps 1-3 for both Simplex systems.
For Triplex: repeat steps 1-5 for all Simplex systems.

ELECTRICAL

Picture 8

1. Plug the transformers output lead into the socket on the water softeners power cord; secure it by means of the TwistLock clamp.
2. Plug the transformer into an electrical outlet.

DUPLEX/TRIPLEX: SERVICE VALVES

Picture 9

1. Plug the DIN plug on the connection cable of the Service Valve into the DIN socket at the back of the electronic timer head of the respective control valve (1).

START-UP

PRESSURIZING

1. Put the bypass system in 'bypass' position.
2. Make sure the electronic controller(s) of the water softener is (are) in service mode.
3. Open the mains water supply.
4. Open a cold treated water faucet nearby the water softener and let the water run for a few minutes until all air is purged and all foreign material that may have resulted from the installation is washed out; close the tap.
5. Gently pressurize the water softener, by putting it into service:
 - close the 'BYPASS' valve;
 - open the 'OUT' valve;
 - slowly open the 'IN' valve.
6. After 2-3 minutes, open a cold treated water faucet nearby the water softener and let the water run for a few minutes until all air is purged from the installation and the resin bed is rinsed (it is normal for the rinse water to show some discoloration!); close the tap.
7. Check the water softener and all hydraulic connections for leaks.
8. For Duplex/Triplex: repeat steps 5-7 for all Simplex systems.

ELECTRONIC CONTROL PANEL

9. Program the electronic controller.
10. For Duplex/Triplex: repeat step 9 for all Simplex systems.

ADJUSTMENT RESIDUAL HARDNESS

ON CONTROL VALVE

Picture 10

11. Adjust the residual hardness of the water that leaves the softener, by means of the adjusting screw, incorporated at the right side of the control valve:
 - to raise the residual hardness: turn the screw counter clockwise;
 - to reduce the residual hardness: turn the screw clockwise.

WITH FACTORY BYPASS (optional)

Picture 11

12. Adjust the residual hardness of the water that leaves the softener, by means of the adjusting screw, incorporated in the 'outlet' valve of the factory bypass:
 - to raise the residual hardness: turn the screw counter clockwise.
 - to reduce the residual hardness: turn the screw clockwise.

INITIATE A REGENERATION

13. Manually initiate a regeneration, by pressing the **scroll** button repeatedly until the display shows:

Regen in 10 sec

14. Leave the water softener in this position; the count-down timer will count down to 0 sec and start a regeneration; to save time you may skip, or terminate prematurely, the second cycle of the regeneration by pressing the **scroll** button once, as soon as the display indicates that the system is in the second regeneration position.
15. For Duplex/Triplex: repeat steps 12-13 for all Simplex systems.

DUPLEX/TRIPLEX: INTERCONNECT CABLE(S)

Picture 12

16. Connect the control valves to each other by means of the InterConnect cable(s); simply plug the DIN plugs on the InterConnect cable(s) in the DIN sockets at the back of the electronic timer of each control valve (●).

DUPLEX ALTERNATING: INITIATE ALTERNATING MODE

17. On 1 of the 2 control valves, manually initiate a regeneration, by pressing the **scroll** button repeatedly until the display shows:

Regen in 10 sec

18. Leave the water softener in this position; the count-down timer will count down to 0 sec and start a regeneration.
19. Press the **scroll** button repeatedly, to advance the control valve through the regeneration cycles and put it in Standby mode, until the display shows:

Stdby 1000 L -

ELECTRONIC CONTROL PANEL

Picture 13

symbol	button	function
	SCROLL	to advance to the next parameter
	UP	to increase the value of the parameter
	DOWN	to decrease the value of the parameter

POWER-UP

After power-up the display will show the installed software version, f.e.:

EZRSDg EZ Rot0.8

After 5 seconds it will automatically revert back to the service display.

POWER FAILURE

In the event of a power failure, the program will remain stored in the NOVRAM® during an undefined period, while an incorporated SuperCap (capacitor) will maintain the correct time of day during a period of several hours; consequently, in case of prolonged power failure, the time of day might not be maintained; if this happens, the time of day will be reset to 8:00 when the power supply is re-established, while the indication will *flash*, indicating that the time of day needs to be set.

8:00 1000L -

When the power failure occurs during the execution of an automatic regeneration, the control valve will remain in its last position; when the power supply is re-established, the control valve will return to the service position, stay there for 60 sec. and restart a complete regeneration from the beginning.

TIMER FAILURE

In the event of a timer failure, the display will show the message:

Service Required

In such case, entering one of the programming levels can possibly solve the problem. However if the problem persists, professional service is required.

SERVICE MODE

In **service mode** the display shows:

- **Simplex Tempo**: the time of day and the remaining number of days:

20:51 4 DAY REM

- **Simplex Eco, Duplex/Triplex Eco Parallel**: the time of day and the remaining capacity:

20:51 1000L -

- **Duplex Eco Alternating**: the systems status (Service or Standby) and the remaining capacity:

SrvC 1000L -

Stdby 1000L -

REGENERATION MODE

In **regeneration mode** the display shows:

- **Simplex Tempo/Eco, Duplex/Triplex Eco Parallel**: the total remaining regeneration time and remaining cycle time:

Rgn:123 CycY:456

- **Duplex Eco Alternating**: the total remaining regeneration time and remaining cycle time:

Rgn:123 CycY:456

When the regeneration is finished, the system remains in Standby, until the other system starts a regeneration:

Stdby 1000L -

*The control valve can be **reset to service mode** at any time by pressing the **scroll**  button, as such manually advancing it through the regeneration cycles.*

CHECKING THE FLOW METER

In case of water usage, the remaining capacity counter in the service display will count back per unit, i.e. per litre. This way the correct functioning of the water meter can be verified.

ELECTRONIC CONTROL PANEL

MANUAL REGENERATION

It is possible to manually initiate a regeneration.

1. Press the **scroll**  button repeatedly until the display shows:

Regen in 10 sec

- If the control valve is left in this position, the count-down timer will count down to 0 sec and *start a regeneration*.
- To cancel this mode, press the **scroll**  button before the countdown timer has reached 0 sec; the control valve will return to the service mode.

2. Press the **scroll**  button again if you want to manually advance the control valve to the next regeneration cycle.

DRIVE MOTOR SPEED

The drive motor of the control valve, that drives the valve body to its different regeneration positions, will start-up at low speed to reduce its noise level. To increase the speed of the drive motor, simply press the **scroll**  button as soon as the drive motor is activated.

PROGRAMMING INSTRUCTIONS – INSTALLER

Before entering the programming mode, make sure that the control valve is in the service mode.

1. Press the **scroll**  button; the display will show:

Language: English

- Press the **up**  or **down**  button to set *the language*.

2. Press the **scroll**  button again; the display will show (*does not apply to Duplex Eco Alternating!*):

Set time: 20:51

- Press the **up**  or **down**  button to set *the time of day*.

3. Press the **scroll**  button again; the display will show:

Simplex Tempo:

Interval: XX Days

- Press the **up**  or **down**  button to set *the number of days between regenerations*.

Simplex Eco, Duplex/Triplex Eco:

Set Hardn.: XX°f

- Press the **up**  or **down**  button to set *the hardness of the incoming untreated water*.

ELECTRONIC CONTROL PANEL

PROGRAMMING INSTRUCTIONS – PARAMETER SET LEVEL

- Before entering the programming mode, make sure that the control valve is in the service mode.
- All configuration parameters on this water softener have been pre-programmed in the factory, to offer optimal performance in a wide range of applications and situations. Nevertheless it may be necessary or desirable to change any of these parameters, to further optimize the water softener's performance or to adapt it to the specific requirements of the installation.

SIMPLEX TEMPO:

1. Press the **scroll** button and hold it for 5 sec until the display shows:

System Check

2. Within 10 sec, press the **up** button; the display will show:

Cycle 1: XX min

- Press the **up** or **down** button to set the length of the regeneration cycle.
- Press the **scroll** button again to advance to the next regeneration cycle.

Cycle 1	Backwash
Cycle 2	Brine draw/slow rinse
Cycle 3	Fast rinse/refill

3. Press the **scroll** button again; the display will show:

Regen @ 2:00

- Press the **up** or **down** button to set the time of regeneration.

4. Press the **scroll** button again; the display will show:

Exit

- Press the **up** or **down** button to save the program into the NOVRAM® and exit the programming level.

ELECTRONIC CONTROL PANEL

SIMPLEX ECO:

1. Press the **scroll** button and hold it for 5 sec until the display shows:

System Check

2. Within 10 sec, press the **up** button; the display will show:

HardUnit: °f

- Press the **up** or **down** button to set the hardness unit. **Make sure to also adjust/convert the exchange capacity!**

3. Press the **scroll** button again; the display will show:

ExCap: 5.5°f M3/L

- Press the **up** or **down** button to set the exchange capacity per litre of resin.

4. Press the **scroll** button again; the display will show:

Resin:XXX liters

- Press the **up** or **down** button to set the volume of resin.

5. Press the **scroll** button again; the display will show:

Override: 7 days

- Press the **up** or **down** button to set the number of days between regenerations.

6. Press the **scroll** button again; the display will show:

Cycle 1: XX min

- Press the **up** or **down** button to set the length of the regeneration cycle.
- Press the **scroll** button again to advance to the next regeneration cycle.

Cycle 1	Backwash
Cycle 2	Brine draw/slow rinse
Cycle 3	Fast rinse/refill

7. Press the **scroll** button again; the display will show:

MTR:SNAP SENSOR

- Press the **up** or **down** button to set the type of water meter sensor.

8. Press the **scroll** button again; the display will show:

Regen:Dlyd/Immd

- Press the **up** or **down** button to set the regeneration mode:
 - **Dlyd/Immd**: when the remaining capacity equals the reserve capacity, a *delayed regeneration* at the programmed time of regeneration is started; however when the remaining capacity equals 0 before the programmed time of regeneration is reached, an *immediate regeneration* is started.
 - **Immediate**: when the remaining capacity equals 0, an *immediate regeneration* is started.
 - **Delayed**: when the remaining capacity equals the reserve capacity, a *delayed regeneration* at the programmed time of regeneration is started.

9. Press the **scroll** button again; the display will show (only when the regeneration mode is set to 'Delayed' or 'Dlyd/Immd'):

Regen @ 2:00

- Press the **up** or **down** button to set the time of regeneration.

10. Press the **scroll** button again; the display will show (only when the regeneration mode is set to 'Dlyd' or 'Dlyd/Immd'):

Rsrv Variable

- Press the **up** or **down** button to set the reserve capacity:
 - **Variable**: the reserve capacity is calculated automatically, based on the registered daily water usage.
 - **Fxd**: press the **scroll** button again and press the **up** or **down** button to set the reserve capacity to a fixed amount.

11. Press the **scroll** button again; the display will show:

Exit

- Press the **up** or **down** button to save the program into the NOVRAM® and exit the programming level.

ELECTRONIC CONTROL PANEL

DUPLEX ECO ALTERNATING:

The 2 Simplex systems, that make up a Duplex system, must be programmed individually; the program does NOT necessarily have to be the same on the 2 Simplex systems!

1. Press the **scroll** button and hold it for 5 sec until the display shows:

System Check

2. Within 10 sec, press the **up** button; the display will show:

HardUnit:°f

- Press the **up** or **down** button to set *the hardness unit. Make sure to also adjust/convert the exchange capacity!*

3. Press the **scroll** button again; the display will show:

ExCap:5.5°f M3/L

- Press the **up** or **down** button to set *the exchange capacity per litre of resin.*

4. Press the **scroll** button again; the display will show:

Resin:XXX liters

- Press the **up** or **down** button to set *the volume of resin.*

5. Press the **scroll** button again; the display will show:

Cycle 1: XX min

- Press the **up** or **down** button to set *the length of the regeneration cycle.*
- Press the **scroll** button again to advance to the next regeneration cycle.

Cycle 1	Backwash
Cycle 2	Brine draw/slow rinse
Cycle 3	Fast rinse/refill

6. Press the **scroll** button again; the display will show:

MTR:SNAP SENSOR

- Press the **up** or **down** button to set *the type of water meter sensor.*

7. Press the **scroll** button again; the display will show:

Exit

- Press the **up** or **down** button to save the program into the NOVRAM® and exit the programming level.

8. Repeat steps 1-7 for both Simplex systems.

ELECTRONIC CONTROL PANEL

DUPLEX/TRIPLEX ECO PARALLEL:

The 2/3 Simplex systems, that make up a Duplex/Triplex system, must be programmed individually; the program does NOT necessarily have to be the same on the 2/3 Simplex systems!

1. Press the **scroll** button and hold it for 5 sec until the display shows:

System Check

2. Within 10 sec, press the **up** button; the display will show:

HardUnit: °f

- Press the **up** or **down** button to set the hardness unit. **Make sure to also adjust/convert the exchange capacity!**
- 3. Press the **scroll** button again; the display will show:

ExCap: 5.5°f M3/L

- Press the **up** or **down** button to set the exchange capacity per litre of resin.
- 4. Press the **scroll** button again; the display will show:

Resin:XXX liters

- Press the **up** or **down** button to set the volume of resin.
- 5. Press the **scroll** button again; the display will show:

Override: 7 days

- Press the **up** or **down** button to set the number of days between regenerations.
- 6. Press the **scroll** button again; the display will show:

Cycle 1: XX min

- Press the **up** or **down** button to set the length of the regeneration cycle.
- Press the **scroll** button again to advance to the next regeneration cycle.

Cycle 1	Backwash
Cycle 2	Brine draw/slow rinse
Cycle 3	Fast rinse/refill

7. Press the **scroll** button again; the display will show:

MTR:SNAP SENSOR

- Press the **up** or **down** button to set the type of water meter sensor.

8. Press the **scroll** button again; the display will show:

Regen: Immediate

- Press the **up** or **down** button to set the regeneration mode:
 - **Immediate**: when the remaining capacity equals 0, an *immediate regeneration* is started.
 - **Dlyd/Immd**: when the remaining capacity equals the reserve capacity, a *delayed regeneration* at the programmed time of regeneration is started; however when the remaining capacity equals 0 before the programmed time of regeneration is reached, an *immediate regeneration* is started.
 - **Delayed**: when the remaining capacity equals the reserve capacity, a *delayed regeneration* at the programmed time of regeneration is started.

9. Press the **scroll** button again; the display will show (only when the regeneration mode is set to 'Delayed' or 'Dlyd/Immd'):

Regen @ 2:00

- Press the **up** or **down** button to set the time of regeneration.

10. Press the **scroll** button again; the display will show (only when the regeneration mode is set to 'Delayed' or 'Dlyd/Immd'):

Rsrv Variable

- Press the **up** or **down** button to set the reserve capacity:
 - **Variable**: the reserve capacity is calculated automatically, based on the registered daily water usage.
 - **Fxd**: press the **scroll** button again and press the **up** or **down** button to set the reserve capacity to a fixed amount.

11. Press the **scroll** button again; the display will show:

Exit

- Press the **up** or **down** button to save the program into the NOVRAM® and exit the programming level.

12. Repeat steps 1-11 for all Simplex systems.

ELECTRONIC CONTROL PANEL

DIAGNOSTICS LEVEL

Besides of all programming parameters, a series of operating parameters can be consulted in the diagnostics level; particularly during a service intervention, these parameters can be helpful to identify the cause of a problem or malfunction

Before entering the diagnostics level, make sure that the control valve is in the service mode.

Accessing the Diagnostics level

1. Press the **scroll**  button and hold it for 5 sec until the display shows:

System Check

2. Within 10 sec, press the **down**  button; the display will show:

Regen XXdays ago

- You are now in the Diagnostics level.
- Press the **scroll**  button to advance to the next diagnostics parameter.

Available diagnostics parameters

- **Regen X days ago:** display shows number of days since last regeneration of the system.
- **In Srv:** display shows total number of days that the system is in service.
- **# of Regens:** display shows the total number of regenerations that have taken place since installation.
- **TotVol:** display shows the total water usage through the system since installation.
- **LastRgn@:** display shows the water usage at the moment of the last regeneration.
- **InstFlow:** display shows the instantaneous flow rate.
- **AvgVol:** display shows the average daily water usage.
- **Capacity:** display shows the calculated volume of softened water between regenerations.
- **Hardness:** display shows the setting of the water hardness.
- **Rsrv:** display shows the setting of the reserve capacity.
- **Regen @:** display shows the setting of the time of regeneration.
- **Override:** display shows the setting of the number of days between regenerations.
- **Cycle X:** display shows the setting of the length of the corresponding regeneration cycle.
- **Units:** display shows that control is programmed for Metric units.
- **MTR:** display shows the setting of the water meter.
- **Capacity:** display shows that control is programmed for hardness setting.
- **Regen:** display shows the setting of the regeneration mode.
- **Valve Type:** display shows the valve type setting.
- **MP Resets:** display shows the number of resets of the microprocessor (*for factory purpose only*).
- **Memory Reset:** display shows the number of corrupt memory start-ups (*for factory purpose only*).

- **EZRSDg:** display shows the software version (*for factory purpose only*).
- **CapToUse:** display shows the remaining capacity.

Exiting the Diagnostics level

1. If no button is pressed within 5 minutes, the microprocessor will exit the diagnostics level and return to the service mode.
2. Press the **scroll**  button repeatedly until the display shows:

Exit

- Press the **up**  or **down**  button to exit the diagnostics level.

MAINTENANCE

ROUTINE CHECKS

Regularly the user should perform a basic check to verify if the water softener is functioning correctly, on the basis of the following control points:

1. Check settings of electronic control panel.
2. Measure water hardness before/after water softener.
3. Check drain line from control valve; there shouldn't be any water flow (unless water softener is in regeneration).
4. Check drain line from brine tank overflow; there shouldn't be any water flow.
5. Check water softener and surrounding area; there shouldn't be any water leakages.

BYPASSING THE WATER SOFTENER

Occasionally it may be necessary to put the water softener hydraulically in bypass, i.e. to isolate it from the water distribution system; f.e.:

- in case of an urgent technical problem;
- when it is not necessary to supply treated water to the application.

WITH FACTORY BYPASS (optional)

Picture 14.a

SERVICE POSITION

① = inlet valve to water softener is OPEN
② = outlet valve from water softener is OPEN

Picture 14.b

BYPASS POSITION

① = inlet valve to water softener is CLOSED
② = outlet valve from water softener is CLOSED

Picture 14.c

MAINTENANCE POSITION

① = inlet valve to water softener is OPEN
② = outlet valve from water softener is CLOSED

WATER CONDITIONER SALT

This water softener needs 'brine' for its periodic regenerations. This brine solution is made from water, that is automatically dosed in the brine tank by the control valve, and water conditioner salt. The user should make sure that the brine tank is always kept full of water conditioner salt. Therefore he should periodically check the salt level inside the brine tank and refill it if necessary. Simply lift the brine tank cover to check the salt level inside the brine tank.

Ideally the level of water conditioner salt inside the brine tank is kept between 1/3 and 2/3. A lower level of water conditioner salt can cause insufficient brine saturation, resulting in a loss of softening capacity. A higher level of water conditioner salt can cause salt bridging (hard crust or salt bridges in the brine tank). When you suspect salt bridging:

- carefully pound on the outside of the brine tank to break loose the salt bridges;
- using a broom (or like blunt tool) carefully push the salt to break it apart;
- pour warm water over the top of the salt to dissolve it.

RESIN CLEANER

Other contaminants (f.e. iron) present in the feed water can cause the resin bed to foul up, resulting in a loss of softening capacity. An approved resin cleaner can be used periodically to thoroughly clean the resin bed.

SANITIZING THE WATER SOFTENER

This water softener is manufactured from premium quality material and assembled in safe conditions to assure it is clean and sanitary. If installed and serviced correctly, this water softener will not infect or contaminate your water supply. However, as in any 'device' plumbed-in in your water distribution system, a proliferation of bacteria is possible, especially in case of 'stagnant water'. therefore this water softener is equipped with a 'days override' feature, that will automatically rinse the resin bed periodically, even in case of low or absence of water usage.

If the power supply to the water softener is disconnected for a longer period of time, we recommend, when the power supply is re-established, to manually initiate a complete regeneration.

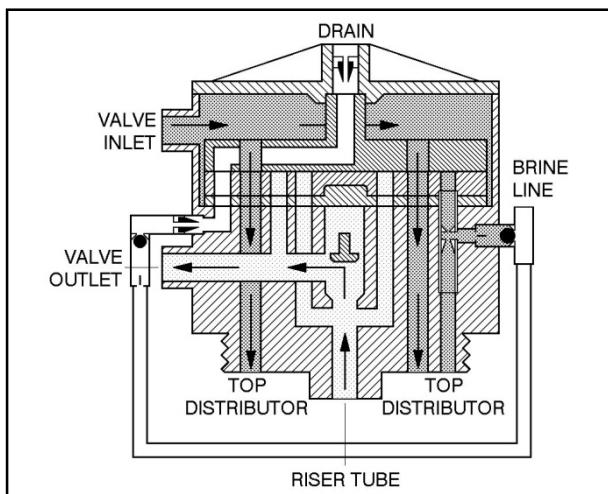
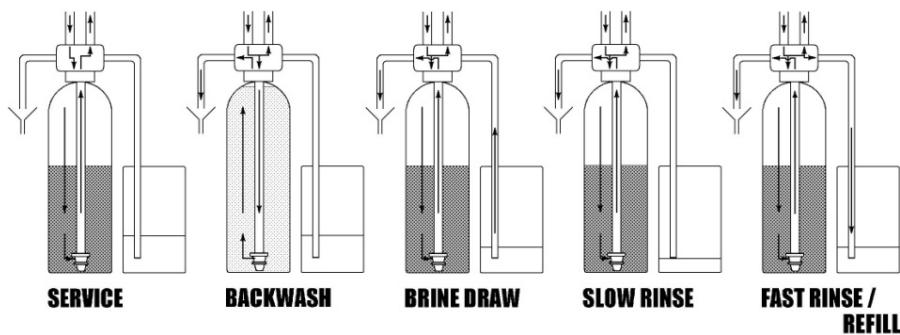
DUPLEX ALTERNATING: SERVICE VALVES

Picture 15

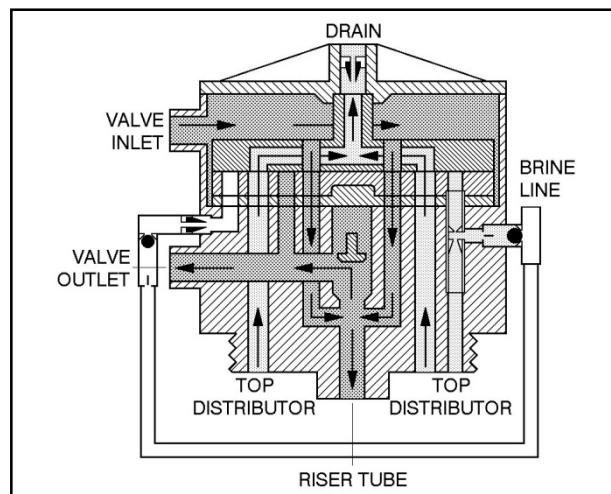
① = automatically operated = normally closed
② = manually operated = constantly open

The Normally Closed Service Valve in the outlet of each Simplex system will only be opened when it is powered. To manually open the Normally Closed Service Valve (f.e. in case of a power failure), simply turn the white solenoid coil counter clockwise.

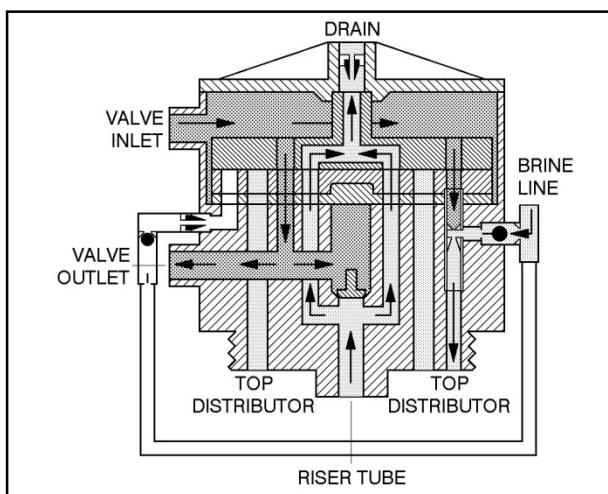
HYDRAULIC FLOW DIAGRAMS



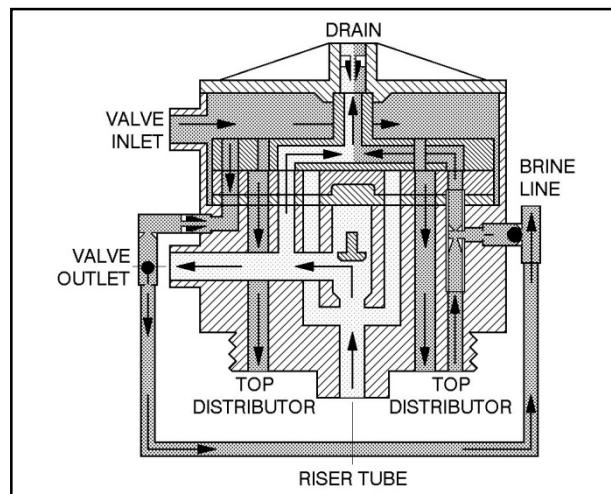
SERVICE



BACKWASH



BRINE DRAW / SLOW RINSE



FAST RINSE / REFILL



SOFT WATER



BRINE / RINSE WATER



HARD WATER

TROUBLESHOOTING

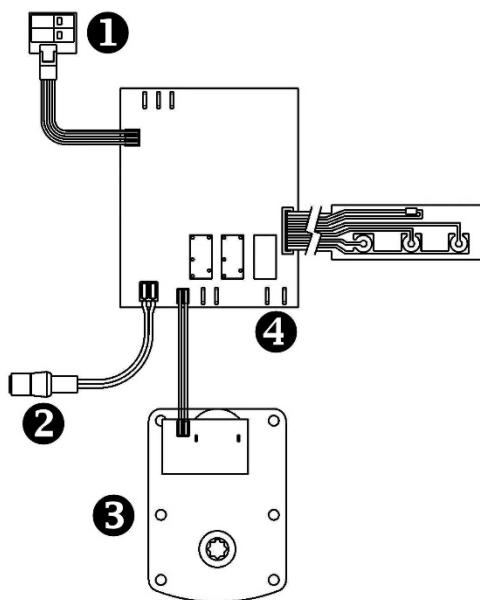
PROBLEM	CAUSE	SOLUTION
Hard (untreated) water to service	Open or defective bypass	Close or replace bypass
	<i>Simplex only:</i> water softener in regeneration	Wait until regeneration finishes or manually advance regeneration to end
	<i>Duplex/Triplex only:</i> one of the Simplex systems in regeneration and Service Valve not closing off properly	Refer to problem "Service Valve not closing off properly"
	<i>Simplex Tempo only:</i> excessive water usage	Initiate regeneration manually
	No salt in brine tank	Add salt and initiate regeneration manually
	Salt bridging in brine tank	Break salt bridge(s) and initiate regeneration manually
	Change in raw water hardness	Measure hardness of incoming untreated water and adjust programming accordingly
	Water softener fails to start a regeneration	Refer to problem "Water softener fails to start a regeneration"
	Valve body and timer out of synchronisation	Synchronize valve body and timer
	Control valve fails to draw brine	Refer to problem "Valve fails to draw brine"
	Decreasing exchange capacity of resin	Clean or replace resin bed
	Loss of resin	Refer to problem "Loss of resin"
	Leak at riser tube	Verify that riser tube is seated correctly and is not cracked
Residual hardness in treated water	Bypass not completely closed	Close bypass
	Mixing valve open	Verify setting of mixing valve
Water softener fails to start a regeneration	Faulty electrical supply	Verify electrical service (fuse, transformer,...)
	<i>Eco only:</i> defective flow meter	Clean and/or replace flow meter
	Defective PCB	Replace PCB
	Defective drive motor	Replace drive motor
Water softener uses too much salt	Excessive water in brine tank	Refer to problem "Excessive water in brine tank"
	Water softener regenerates too frequently	Verify program
Excessive water in brine tank	Control valve fails to draw brine	Refer to problem "Control valve fails to draw brine"
	Improper refill time setting	Verify that refill time corresponds to the proper salt level and amount of resin
	Missing refill flow control	Verify that refill flow control is installed and properly sized
	Leak from control valve to brine tank	Clean or replace brine tee on control valve Check synchronisation between valve body and timer
Salt taste in treated water	Excessive water in brine tank	Refer to problem "Excessive water in brine tank"
	Injector undersized	Verify injector selection and operating pressure
	Improper brine/slow rinse time setting	Verify that brine/slow rinse time corresponds to the proper salt level and amount of resin
Loss of water pressure	Mineral or iron build-up in resin tank	Clean resin bed and control valve; increase regeneration frequency
	Plugged lower and/or upper distributor	Verify that distributors are free of debris
Drain line from control valve flows continuously	Water softener in regeneration	Wait until regeneration finishes or manually advance regeneration to end
	Faulty electrical supply	Verify electrical service (fuse, transformer,...)
	Defective drive motor	Replace drive motor
	Defective micro switch	Replace micro switches
	Defective PCB	Replace PCB
	Valve body and timer out of synchronisation	Synchronise valve body and timer
Drain line from brine tank overflow flows continuously	Excessive water in brine tank	Refer to problem "Excessive water in brine tank"

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Control valve fails to refill brine tank	Improper refill time setting	Verify that refill time corresponds to salt level and amount of resin
	Plugged refill flow control	Clean refill flow control
Loss of resin	Lower and/or upper distributor damaged	Replace distributor(s)
	Leak between riser tube and upper distributor	Verify that riser tube is seated correctly and is not cracked
Control valve fails to draw brine	Low operating pressure	Check operating pressure; must be higher than 1,4 bar
	Plugged injector	Clean injector
	Restricted drain line	Verify drain line for kinks or restrictions
	Restricted brine line	Verify brine line for kinks or restrictions
	Leak in brine line	Verify brine line and connections for air leakage
	No water in brine tank	Refer to problem "Control valve fails to refill brine tank"
Control valve cycles continuously	Defective micro switch	Replace micro switches
Duplex/Triplex Parallel: all Simplex systems regenerate simultaneously	InterConnect communication does not function correctly	Check connections of InterConnect cable(s)
	Defective PCB	Replace PCB
Duplex Alternating: both Simplex systems are in service simultaneously	InterConnect communication does not function correctly	Check connections of InterConnect cable
	Defective PCB	Replace PCB
	Defective Service Valve	Replace Service Valve

ELECTRICAL WIRING DIAGRAMS

SIMPLEX TEMPO



① = position switches

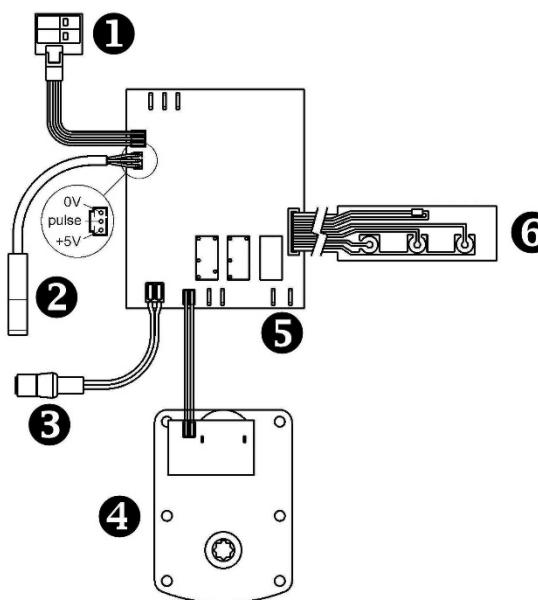
② = power lead

③ = drive motor

④ = auxilliary contact (24V, max. 500mA)

⑤ = key pad

SIMPLEX ECO



① = position switches

② = flow meter

③ = power lead

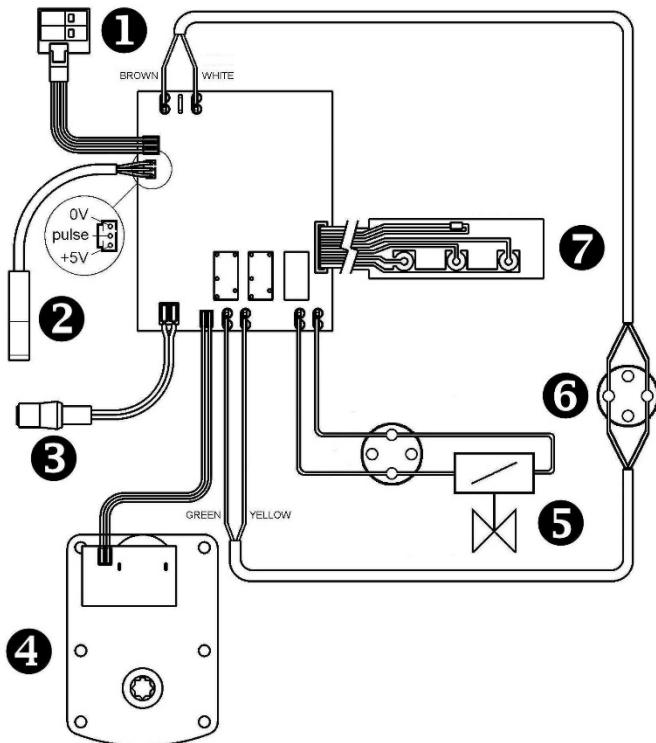
④ = drive motor

⑤ = auxilliary contact (24V, max. 500mA)

⑥ = key pad

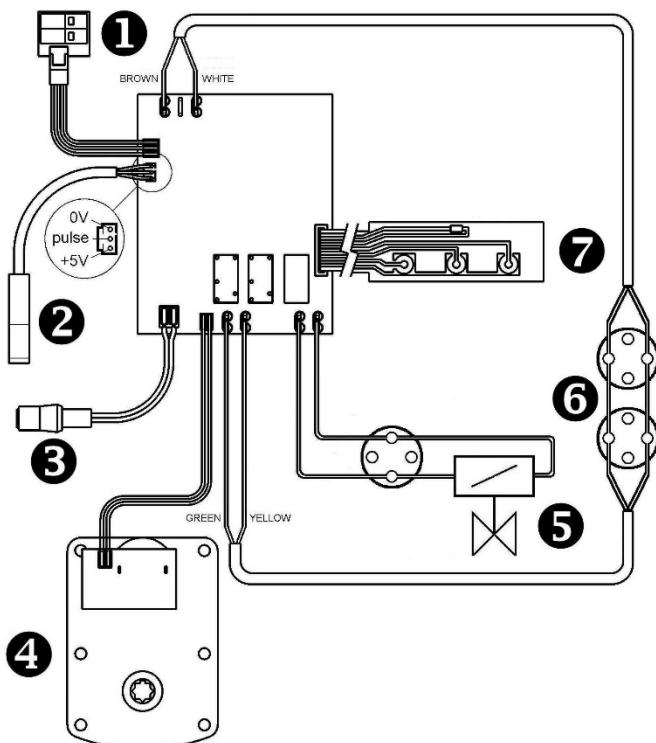
ELECTRICAL WIRING DIAGRAMS

DUPLEX ECO - ALTERNATING



- ① = position switches
- ② = flow meter
- ③ = power lead
- ④ = drive motor
- ⑤ = service valve Normally Closed
- ⑥ = InterConnect socket
- ⑦ = key pad

DUPLEX/TRIPLEX ECO - PARALLEL



- ① = position switches
- ② = flow meter
- ③ = power lead
- ④ = drive motor
- ⑤ = service valve Normally Open
- ⑥ = InterConnect sockets
- ⑦ = key pad

DEFAULT PARAMETER SETTINGS

Model	Simplex Tempo					
Resin	25	50	75	100	125	150
Cycle 1: BACKWASH (min)	5	5	5	5	5	5
Cycle 2: BRINE DRAW/SLOW RINSE (min)	48	76	104	77	73	87
Cycle 3: FAST RINSE/REFILL (min)	6	6	9	12	14	17
Regen @	2:00	2:00	2:00	2:00	2:00	2:00

Model	Simplex Eco					
Resin	25	50	75	100	125	150
Hardness unit ⁽¹⁾	°f	°f	°f	°f	°f	°f
Exchange capacity per liter resin (°f M ³ /L) ^{(1) (2)}	5,5	5,5	5,5	5,5	5,5	5,5
Resin (liters)	25	50	75	100	125	150
Override (days)	7	7	7	7	7	7
Cycle 1: BACKWASH (min)	5	5	5	5	5	5
Cycle 2: BRINE DRAW/SLOW RINSE (min)	48	76	104	77	73	87
Cycle 3: FAST RINSE/REFILL (min) ⁽²⁾	6	6	9	12	14	17
MTR	SNAP	SNAP	SNAP	SNAP	SNAP	SNAP
Regen	Dlyd/Immd	Dlyd/Immd	Dlyd/Immd	Dlyd/Immd	Dlyd/Immd	Dlyd/Immd
Regen @	2:00	2:00	2:00	2:00	2:00	2:00
Rsrv	Variable	Variable	Variable	Variable	Variable	Variable

(1) When the Hardness unit is changed, the Exchange capacity per liter resin needs to be adjusted accordingly: to convert from °f to °d, multiply x 0,56; 5,5 °f M³/L equals 3,1 °d M³/L.

(2) When the Exchange capacity per liter resin is changed, the refill cycle time needs to be adjusted accordingly.

Model	Duplex Eco Alternating					
Resin	25	50	75	100	125	150
Hardness unit ⁽¹⁾	°f	°f	°f	°f	°f	°f
Exchange capacity per liter resin (°f M ³ /L) ^{(1) (2)}	5,5	5,5	5,5	5,5	5,5	5,5
Resin (liters)	25	50	75	100	125	150
Cycle 1: BACKWASH (min)	5	5	5	5	5	5
Cycle 2: BRINE DRAW/SLOW RINSE (min)	48	76	104	77	73	87
Cycle 3: FAST RINSE/REFILL (min) ⁽²⁾	6	6	9	12	14	17
MTR	SNAP	SNAP	SNAP	SNAP	SNAP	SNAP

(1) When the Hardness unit is changed, the Exchange capacity per liter resin needs to be adjusted accordingly: to convert from °f to °d, multiply x 0,56; 5,5 °f M³/L equals 3,1 °d M³/L.

(2) When the Exchange capacity per liter resin is changed, the refill cycle time needs to be adjusted accordingly.

Model	Duplex/Triplex Eco Parallel					
Resin	25	50	75	100	125	150
Hardness unit ⁽¹⁾	°f	°f	°f	°f	°f	°f
Exchange capacity per liter resin (°f M ³ /L) ^{(1) (2)}	5,5	5,5	5,5	5,5	5,5	5,5
Resin (liters)	25	50	75	100	125	150
Override (days)	7	7	7	7	7	7
Cycle 1: BACKWASH (min)	5	5	5	5	5	5
Cycle 2: BRINE DRAW/SLOW RINSE (min)	48	76	104	77	73	87
Cycle 3: FAST RINSE/REFILL (min) ⁽²⁾	6	6	9	12	14	17
MTR	SNAP	SNAP	SNAP	SNAP	SNAP	SNAP
Regen	Immediate	Immediate	Immediate	Immediate	Immediate	Immediate

(1) When the Hardness unit is changed, the Exchange capacity per liter resin needs to be adjusted accordingly: to convert from °f to °d, multiply x 0,56; 5,5 °f M³/L equals 3,1 °d M³/L.

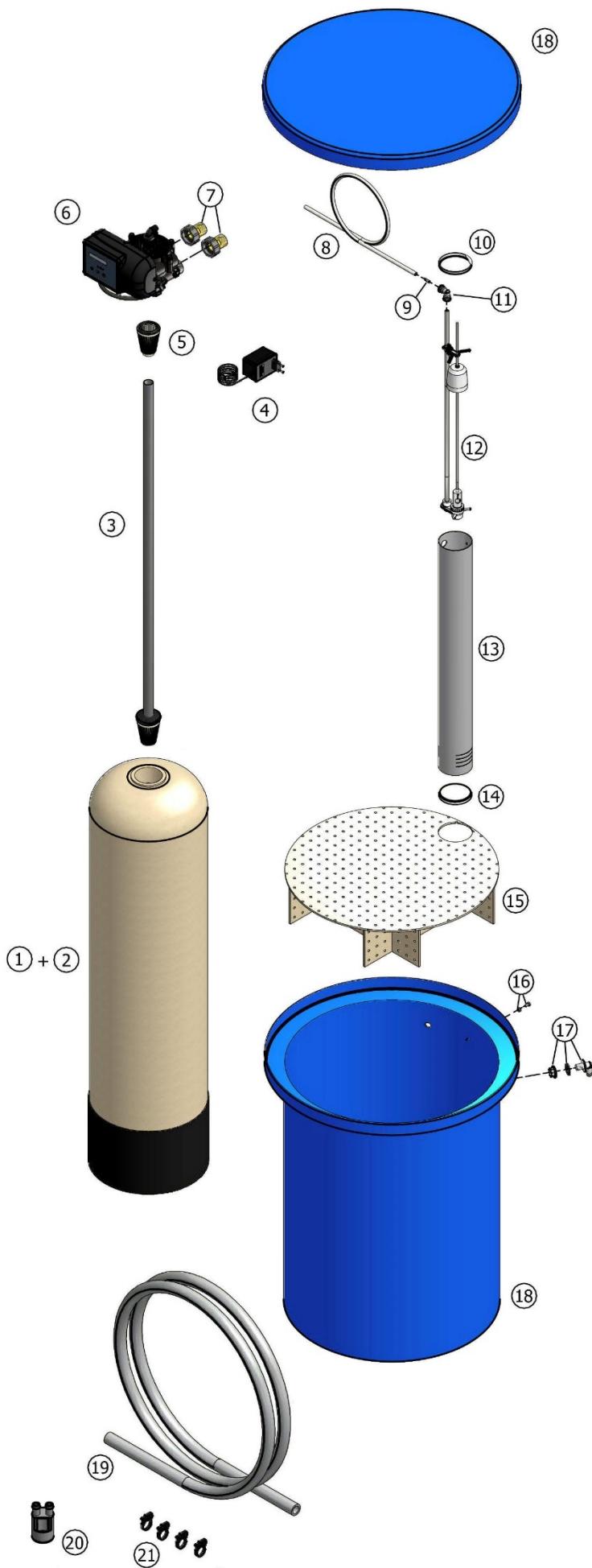
(2) When the Exchange capacity per liter resin is changed, the refill cycle time needs to be adjusted accordingly.

COMPOSITION OVERVIEW

Model	Resin volume ltr	PN	Control valve, incl. EuroT transformer, 1" male BSP connections		InterConnect cable	Service Valves	Pressure tank, incl. distributor assy		Brine tank, incl. platform, brine valve assy		Resin (25 kg bag)
			model	#			#	model	#	#	
Simplex Tempo	25	35659	2400TS/L4JB/AUX	1	0	0	10x35	1	125 ltr	1	1
	50	35329	2400TS/L1KD/AUX	1	0	0	12x48	1	125 ltr	1	2
	75	35330	2400TS/L1LD/AUX	1	0	0	13x54	1	275 ltr	1	3
	100	35331	2400TS/L2MD/AUX	1	0	0	14x65	1	275 ltr	1	4
	125	35332	2400TS/L2ND/AUX	1	0	0	16x65	1	500 ltr	1	5
	150	35333	2400TS/L2ND/AUX	1	0	0	16x65	1	500 ltr	1	6
Simplex Eco	25	35660	2400VS/L4JB/AUX	1	0	0	10x35	1	125 ltr	1	1
	50	35334	2400VS/L1KD/AUX	1	0	0	12x48	1	125 ltr	1	2
	75	35335	2400VS/L1LD/AUX	1	0	0	13x54	1	275 ltr	1	3
	100	35336	2400VS/L2MD/AUX	1	0	0	14x65	1	275 ltr	1	4
	125	35337	2400VS/L2ND/AUX	1	0	0	16x65	1	500 ltr	1	5
	150	35338	2400VS/L2ND/AUX	1	0	0	16x65	1	500 ltr	1	6
Duplex Eco Alternating	2 x 25	35663	2400VS/L4JB/ALT	2	1	2 x NC	10x35	2	125 ltr ⁽¹⁾	1	2
	2 x 50	35664	2400VS/L1KD/ALT	2	1	2 x NC	12x48	2	275 ltr ⁽¹⁾	1	4
	2 x 75	35665	2400VS/L1LD/ALT	2	1	2 x NC	13x54	2	500 ltr ⁽¹⁾	1	6
	2 x 100	35666	2400VS/L2MD/ALT	2	1	2 x NC	14x65	2	500 ltr ⁽¹⁾	1	8
	2 x 125	35667	2400VS/L2ND/ALT	2	1	2 x NC	16x65	2	750 ltr ⁽¹⁾	1	10
	2 x 150	35668	2400VS/L2ND/ALT	2	1	2 x NC	16x65	2	750 ltr ⁽¹⁾	1	12
Duplex Eco Parallel	2 x 25	35661	2400VS/L4JB/PRL	2	1	2 x NO	10x35	2	125 ltr ⁽¹⁾	1	2
	2 x 50	35339	2400VS/L1KD/PRL	2	1	2 x NO	12x48	2	275 ltr ⁽¹⁾	1	4
	2 x 75	35340	2400VS/L1LD/PRL	2	1	2 x NO	13x54	2	500 ltr ⁽¹⁾	1	6
	2 x 100	35341	2400VS/L2MD/PRL	2	1	2 x NO	14x65	2	500 ltr ⁽¹⁾	1	8
	2 x 125	35342	2400VS/L2ND/PRL	2	1	2 x NO	16x65	2	750 ltr ⁽¹⁾	1	10
	2 x 150	35343	2400VS/L2ND/PRL	2	1	2 x NO	16x65	2	750 ltr ⁽¹⁾	1	12
Triplex Eco Parallel	3 x 25	35662	2400VS/J4JB/PRL	3	2	3 x NO	10x35	3	125 ltr	3	3
	3 x 50	35652	2400VS/L1KD/PRL	3	2	3 x NO	12x48	3	125 ltr	3	6
	3 x 75	35653	2400VS/L1LD/PRL	3	2	3 x NO	13x54	3	275 ltr	3	9
	3 x 100	35654	2400VS/L2MD/PRL	3	2	3 x NO	14x65	3	275 ltr	3	12
	3 x 125	35655	2400VS/L2ND/PRL	3	2	3 x NO	16x65	3	500 ltr	3	15
	3 x 150	35656	2400VS/L2ND/PRL	3	2	3 x NO	16x65	3	500 ltr	3	18

(1) Brine tank contains 2 x brine valve assy.

EXPLODED VIEW - SIMPLEX TEMPO/ECO

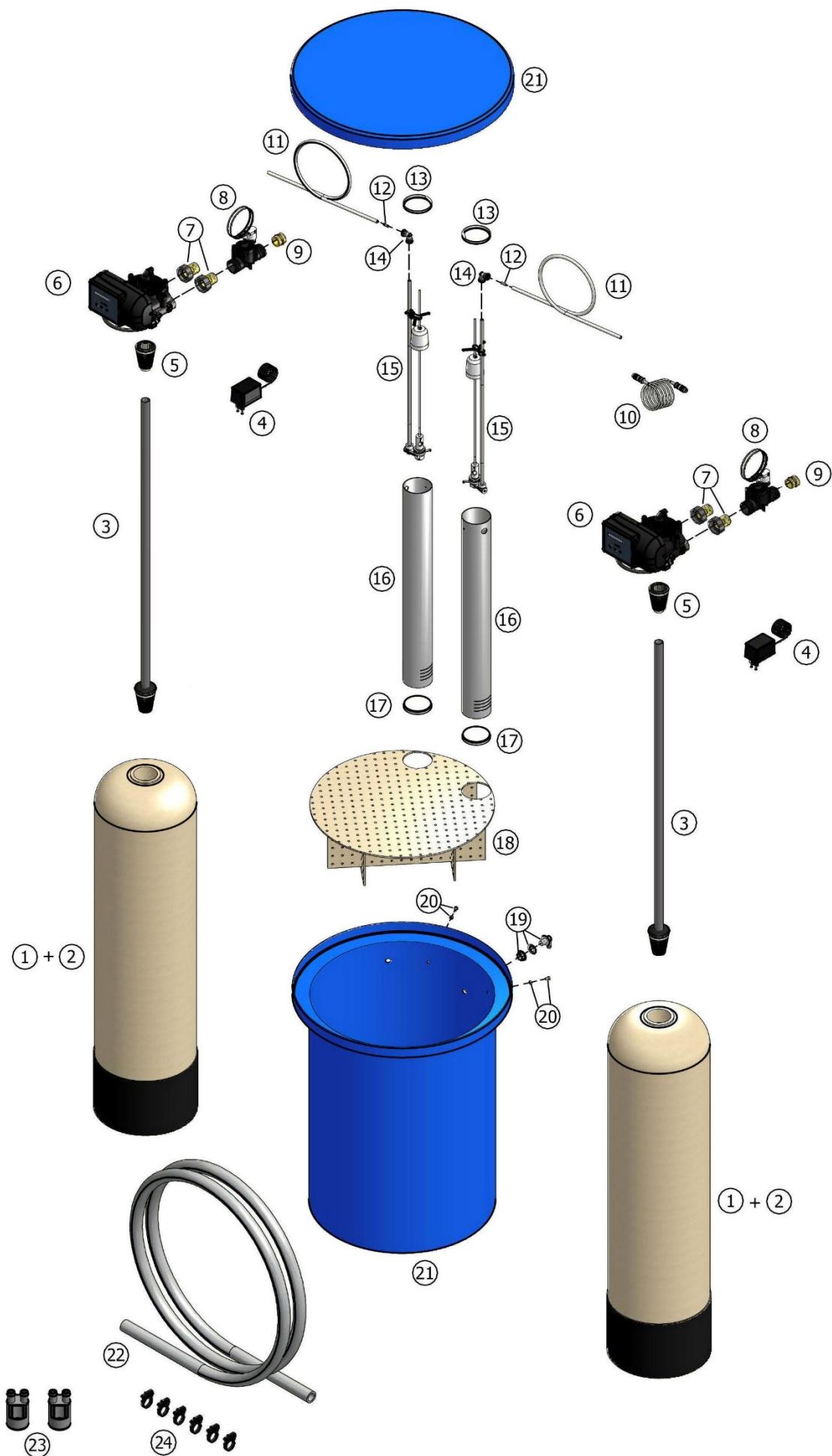


EXPLODED VIEW - SIMPLEX TEMPO/ECO

Item	PN	Description	Remark	(*)
1	PT/1035/BA PT/1248/BA PT/1354/BA PT/1465/BA PT/1665/BA	Pressure tank 10x35 Pressure tank 12x48 Pressure tank 13x54 Pressure tank 14x65 Pressure tank 16x65	25 Ltr 50 Ltr 75 Ltr 100 Ltr 125 Ltr, 150 Ltr	✓ ✓ ✓ ✓ ✓
2	E8000	Softening resin	multiple of 25 ltr	✓
3	38534	Riser tube assembly	to be cut to length	✓
4	28/298/11	Transformer 230/24V - 50 Hz, 24VA, EuroT plug		✓
5	287/166	Top distributor		✓
6	2400TS/J4JB/AUX 2400TS/J1KD/AUX 2400TS/J1LD/AUX 2400TS/J2MD/AUX 2400TS/J2ND/AUX 2400VS/J4JB/AUX 2400VS/J1KD/AUX 2400VS/J1LD/AUX 2400VS/J2MD/AUX 2400VS/J2ND/AUX	Control valve Control valve Control valve Control valve Control valve Control valve Control valve Control valve Control valve Control valve	Tempo 25 Ltr Tempo 50 Ltr Tempo 75 Ltr Tempo 100 Ltr Tempo 125 Ltr, 150 Ltr Eco 25 Ltr Eco 50 Ltr Eco 75 Ltr Eco 100 Ltr Eco 125 Ltr, Eco 150 Ltr	
7	568/303/1	Connection kit 1" male		✓
8	H1015/2	Brine line polytube (std length is 2 mtr)	to be ordered per meter	✓
9	38519	Brine line filter		✓
10	H1016/2	Brine well cap, top		
11	DM/A6EU6	Quick-fit elbow 3/8"		✓
12	38533	Brine valve assembly 464HF	to be cut to length	✓
13	BW3.5/072 BW3.5/088	Brine well, 72 cm Brine well, 88 cm	25 Ltr, 50 Ltr 75 Ltr, 100 Ltr, 125 Ltr, 150 Ltr	
14	H1016/4	Brine well cap, bottom		
15	BP/0125 BP/0275 BP/0500	Brine platform for brine tank 125 Ltr Brine platform for brine tank 275 Ltr Brine platform for brine tank 500 Ltr	25 Ltr, 50 Ltr 75 Ltr, 100 Ltr 125 Ltr, 150 Ltr	
16	38535	Fastener (snap rivet & washer), brine well		
17	38532	Overflow assembly		
18	BT/0125 BT/0275 BT/0500	Brine tank 125 Ltr Brine tank 275 Ltr Brine tank 500 Ltr	25 Ltr, 50 Ltr 75 Ltr, 100 Ltr 125 Ltr, 150 Ltr	
19	38522	Drain hose		
20	74163	Air gap with double hose barb		
21	38521	Clamp, drain hose (4x)		

(*) Recommended Spare Part

EXPLODED VIEW - DUPLEX ECO ALTERNATING

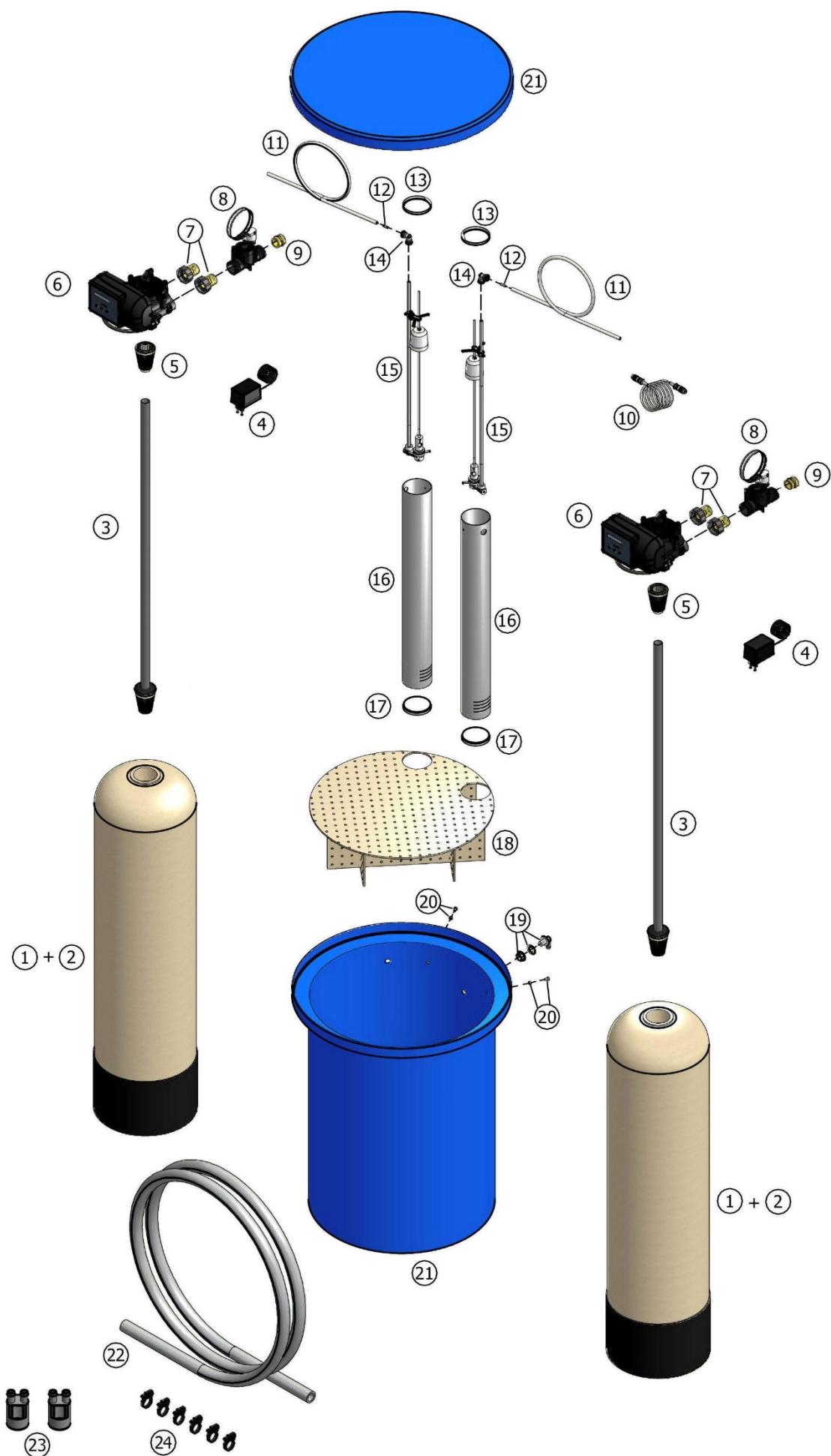


EXPLODED VIEW - DUPLEX ECO ALTERNATING

Item	PN	Description	Remark	(*)
1	PT/1035/BA PT/1248/BA PT/1354/BA PT/1465/BA PT/1665/BA	Pressure tank 10x35 Pressure tank 12x48 Pressure tank 13x54 Pressure tank 14x65 Pressure tank 16x65	25 Ltr 50 Ltr 75 Ltr 100 Ltr 125 Ltr, 150 Ltr	✓ ✓ ✓ ✓ ✓
2	E8000	Softening resin	multiple of 25 ltr	✓
3	38534	Riser tube assembly	to be cut to length	✓
4	28/298/11	Transformer 230/24V - 50 Hz, 24VA, EuroT plug		✓
5	287/166	Top distributor		✓
6	2400VS/J4JB/ALT 2400VS/J1KD/ALT 2400VS/J1LD/ALT 2400VS/J2MD/ALT 2400VS/J2ND/ALT	Control valve Control valve Control valve Control valve Control valve	25 Ltr 50 Ltr 75 Ltr 100 Ltr 125 Ltr, 150 Ltr	
7	568/303/1	Connection kit 1" male		✓
8	74002	Service valve, Normally Closed		✓
9	74089	Brass adaptor 1" male		
10	74069	InterConnect cable		✓
11	H1015/2	Brine line polytube (std length is 2 mtr)	to be ordered per meter	✓
12	38519	Brine line filter		✓
13	H1016/2	Brine well cap, top		
14	DM/A6EU6	Quick-fit elbow 3/8"		✓
15	38533	Brine valve assembly 464HF	to be cut to length	✓
16	BW3.5/072 BW3.5/088	Brine well, 72 cm Brine well, 88 cm	25 Ltr 50 Ltr, 75 Ltr, 100 Ltr, 125 Ltr, 150 Ltr	
17	H1016/4	Brine well cap, bottom		
18	BP/0125 BP/0275 BP/0500 BP/0750	Brine platform for brine tank 125 Ltr Brine platform for brine tank 275 Ltr Brine platform for brine tank 500 Ltr Brine platform for brine tank 750 Ltr	25 Ltr 50 Ltr 75 Ltr, 100 Ltr 125 Ltr, 150 Ltr	
19	38532	Overflow assembly		
20	38535	Fastener (snap rivet & washer), brine well		
21	BT/0125 BT/0275 BT/0500 BT/0750	Brine tank 125 Ltr Brine tank 275 Ltr Brine tank 500 Ltr Brine tank 750 Ltr	25 Ltr 50 Ltr 75 Ltr, 100 Ltr 125 Ltr, 150 Ltr	
22	38522	Drain hose	to be ordered per meter	
23	74163	Air gap with double hose barb (2x)		
24	38521	Clamp, drain hose (6x)		

(*) Recommended Spare Part

EXPLODED VIEW - DUPLEX ECO PARALLEL

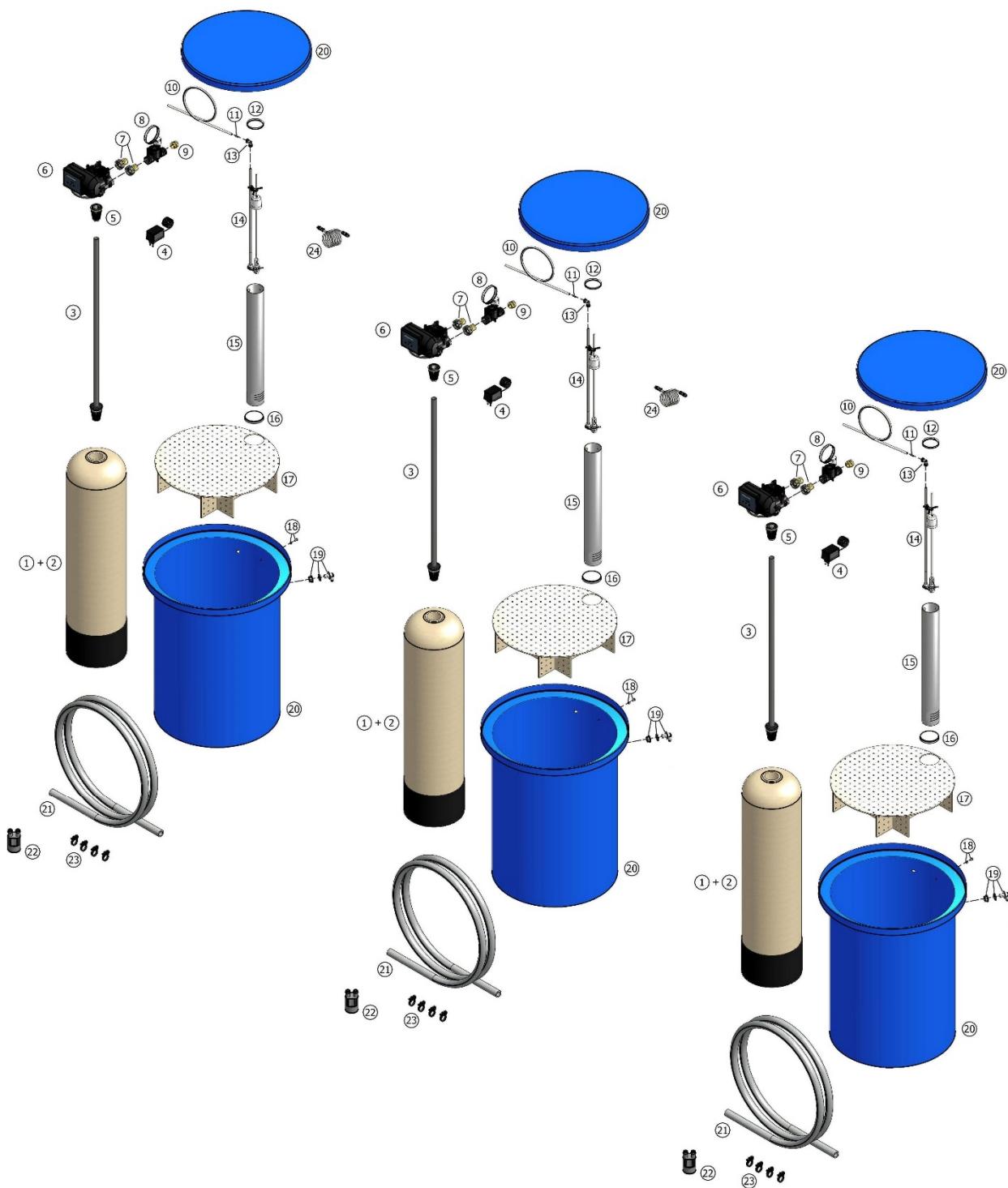


EXPLODED VIEW - DUPLEX ECO PARALLEL

Item	PN	Description	Remark	(*)
1	PT/1035/BA PT/1248/BA PT/1354/BA PT/1465/BA PT/1665/BA	Pressure tank 10x35 Pressure tank 12x48 Pressure tank 13x54 Pressure tank 14x65 Pressure tank 16x65	25 Ltr 50 Ltr 75 Ltr 100 Ltr 125 Ltr, 150 Ltr	✓ ✓ ✓ ✓ ✓
2	E8000	Softening resin	multiple of 25 ltr	✓
3	38534	Riser tube assembly	to be cut to length	✓
4	28/298/11	Transformer 230/24V - 50 Hz, 24VA, EuroT plug		✓
5	287/166	Top distributor		✓
6	2400VS/J4JB/PRL 2400VS/J1KD/PRL 2400VS/J1LD/PRL 2400VS/J2MD/PRL 2400VS/J2ND/PRL	Control valve Control valve Control valve Control valve Control valve	25 Ltr 50 Ltr 75 Ltr 100 Ltr 125 Ltr, 150 Ltr	
7	568/303/1	Connection kit 1" male		✓
8	74075	Service valve, Normally Open		✓
9	74089	Brass adaptor 1" male		
10	74069	InterConnect cable		✓
11	H1015/2	Brine line polytube (std length is 2 mtr)	to be ordered per meter	✓
12	38519	Brine line filter		✓
13	H1016/2	Brine well cap, top		
14	DM/A6EU6	Quick-fit elbow 3/8"		✓
15	38533	Brine valve assembly 464HF	to be cut to length	✓
16	BW3.5/072 BW3.5/088	Brine well, 72 cm Brine well, 88 cm	25 Ltr 50 Ltr, 75 Ltr, 100 Ltr, 125 Ltr, 150 Ltr	
17	H1016/4	Brine well cap, bottom		
18	BP/0125 BP/0275 BP/0500 BP/0750	Brine platform for brine tank 125 Ltr Brine platform for brine tank 275 Ltr Brine platform for brine tank 500 Ltr Brine platform for brine tank 750 Ltr	25 Ltr 50 Ltr 75 Ltr, 100 Ltr 125 Ltr, 150 Ltr	
19	38532	Overflow assembly		
20	38535	Fastener (snap rivet & washer), brine well		
21	BT/0125 BT/0275 BT/0500 BT/0750	Brine tank 125 Ltr Brine tank 275 Ltr Brine tank 500 Ltr Brine tank 750 Ltr	25 Ltr 50 Ltr 75 Ltr, 100 Ltr 125 Ltr, 150 Ltr	
22	38522	Drain hose	to be ordered per meter	
23	74163	Air gap with double hose barb (2x)		
24	38521	Clamp, drain hose (6x)		

(*) Recommended Spare Part

EXPLODED VIEW - TRIPLEX ECO PARALLEL

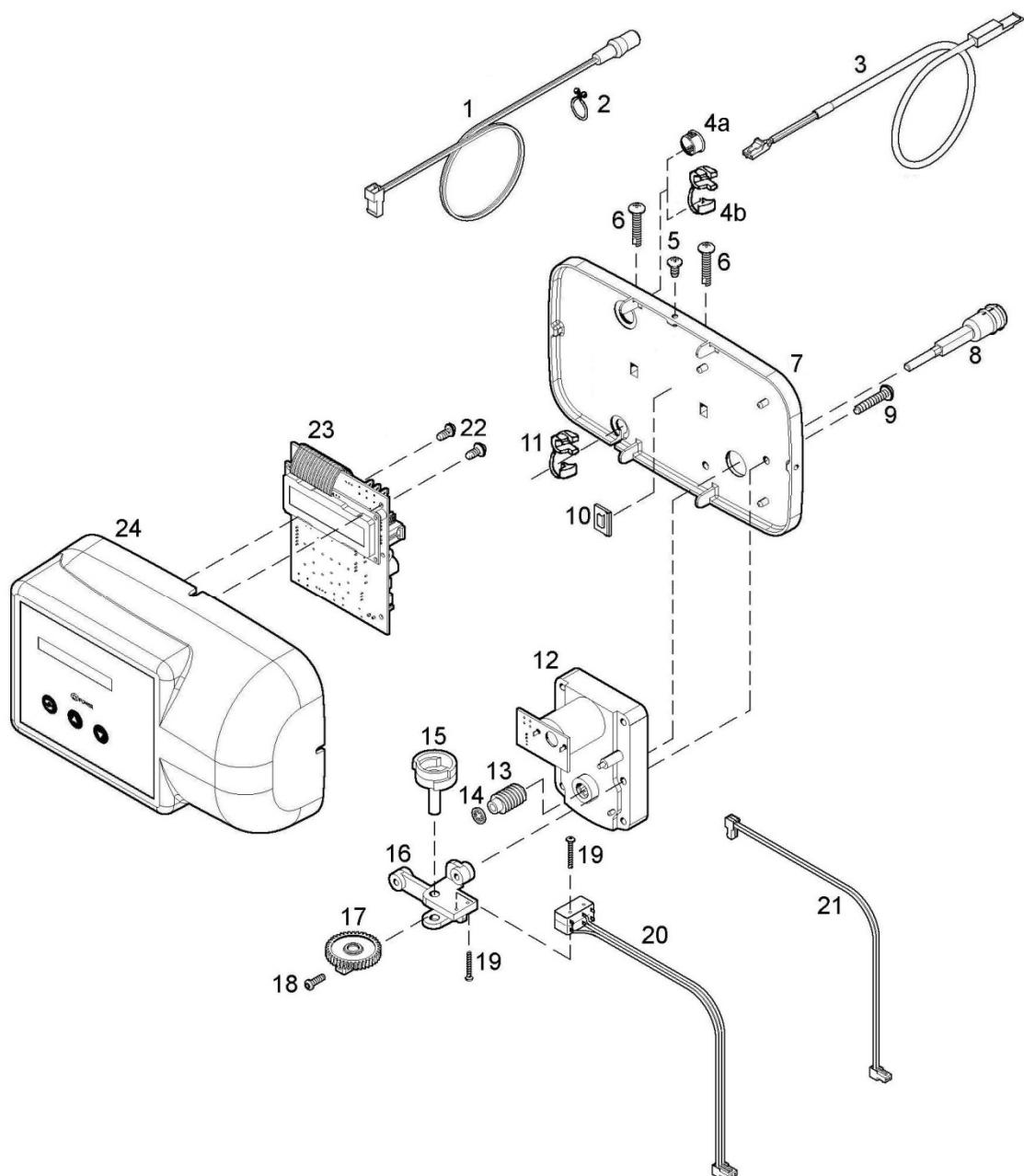


EXPLODED VIEW - TRIPLEX ECO PARALLEL

Item	PN	Description	Remark	(*)
1	PT/1035/BA PT/1248/BA PT/1354/BA PT/1465/BA PT/1665/BA	Pressure tank 10x35 Pressure tank 12x48 Pressure tank 13x54 Pressure tank 14x65 Pressure tank 16x65	25 Ltr 50 Ltr 75 Ltr 100 Ltr 125 Ltr, 150 Ltr	✓ ✓ ✓ ✓ ✓
2	E8000	Softening resin	multiple of 25 ltr	✓
3	38534	Riser tube assembly	to be cut to length	✓
4	28/298/11	Transformer 230/24V - 50 Hz, 24VA, EuroT plug		✓
5	287/166	Top distributor		✓
6	2400VS/J4JB/PRL 2400VS/J1KD/PRL 2400VS/J1LD/PRL 2400VS/J2MD/PRL 2400VS/J2ND/PRL	Control valve Control valve Control valve Control valve Control valve	25 Ltr 50 Ltr 75 Ltr 100 Ltr 125 Ltr, 150 Ltr	
7	568/303/1	Connection kit 1" male		✓
8	74075	Service valve, Normally Open		✓
9	74089	Brass adaptor 1" male		
10	H1015/2	Brine line polytube (std length is 2 mtr)	to be ordered per meter	✓
11	38519	Brine line filter		✓
12	H1016/2	Brine well cap, top		
13	DM/A6EU6	Quick-fit elbow 3/8"		✓
14	38533	Brine valve assembly 464HF	to be cut to length	✓
15	BW3.5/072 BW3.5/088	Brine well, 72 cm Brine well, 88 cm	25 Ltr, 50 Ltr 75 Ltr, 100 Ltr, 125 Ltr, 150 Ltr	
16	H1016/4	Brine well cap, bottom		
17	BP/0125 BP/0275 BP/0500	Brine platform for brine tank 125 Ltr Brine platform for brine tank 275 Ltr Brine platform for brine tank 500 Ltr	25 Ltr, 50 Ltr 75 Ltr, 100 Ltr 125 Ltr, 150 Ltr	
18	38535	Fastener (snap rivet & washer), brine well		
19	38532	Overflow assembly		
20	BT/0125 BT/0275 BT/0500	Brine tank 125 Ltr Brine tank 275 Ltr Brine tank 500 Ltr	25 Ltr, 50 Ltr 75 Ltr, 100 Ltr 125 Ltr, 150 Ltr	
21	38522	Drain hose	to be ordered per meter	
22	74163	Air gap with double hose barb		
23	38521	Clamp, drain hose (4x)		
24	74069	InterConnect cable, parallel		

(*) Recommended Spare Part

EXPLODED VIEW - TIMER HEAD - SIMPLEX

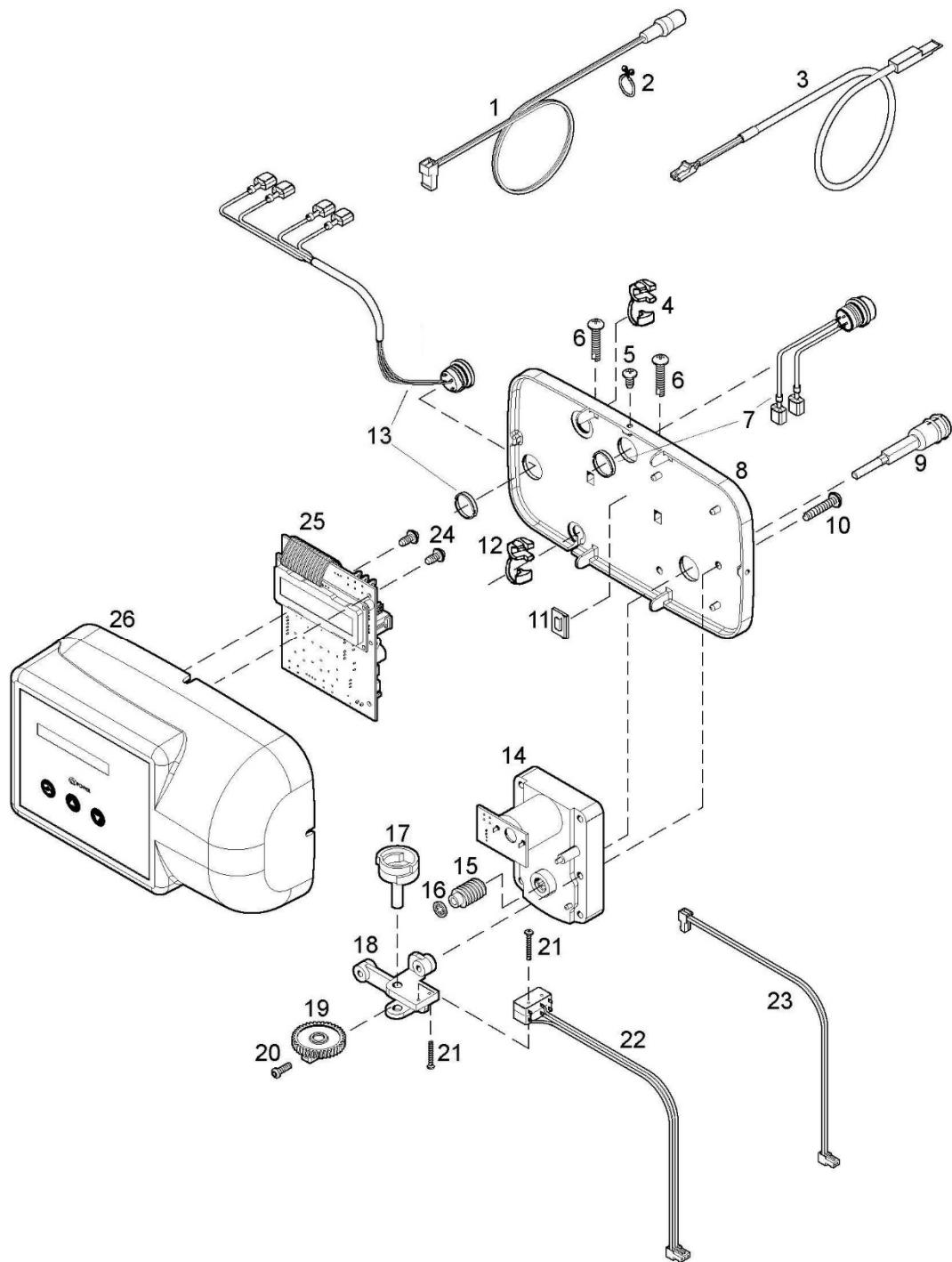


EXPLODED VIEW - TIMER HEAD - SIMPLEX

Item	PN	Description	Remark	(*)
1	70971	Power lead with plug		✓
2	72263	Clamp		
3	72519	Flow meter cable	Simplex Eco	✓
4a	28/244/1	Plug (large)	Simplex Tempo	
4b	28/8/7	Strain relief, flow meter cable	Simplex Eco	
5	71502	Screw, timer cover (3x)		
6	15/222	Screw, back plate (2x)		
7	70962	Back plate		
8	2100/206	Drive shaft		
9	15/222	Screw, drive motor assy (2x)		
10	28/245/4	Cable clamp		
11	71502	Strain relief, power lead		
12	72261	Drive motor		✓
13	568/227/2	Worm		
14	19/48	Retaining ring		
15	70965	Switch cam		
16	568/386	Bracket, micro switches		
17	568/310	Gear, switch cam		
18	15/184/7	Locking screw, switch cam		
19	15/173/12	Screw, micro switches (2x)		
20	72451	Micro switch assy		✓
21	71679	Cable set, drive motor		✓
22	15/102	Screw, PCB (2x)		
23	72702 72701	Printed Circuit Board Printed Circuit Board	Simplex Tempo Simplex Eco	✓ ✓
24	72614	Timer cover assembly		

(*) Recommended Spare Part

EXPLODED VIEW - TIMER HEAD - DUPLEX ALTERNATING

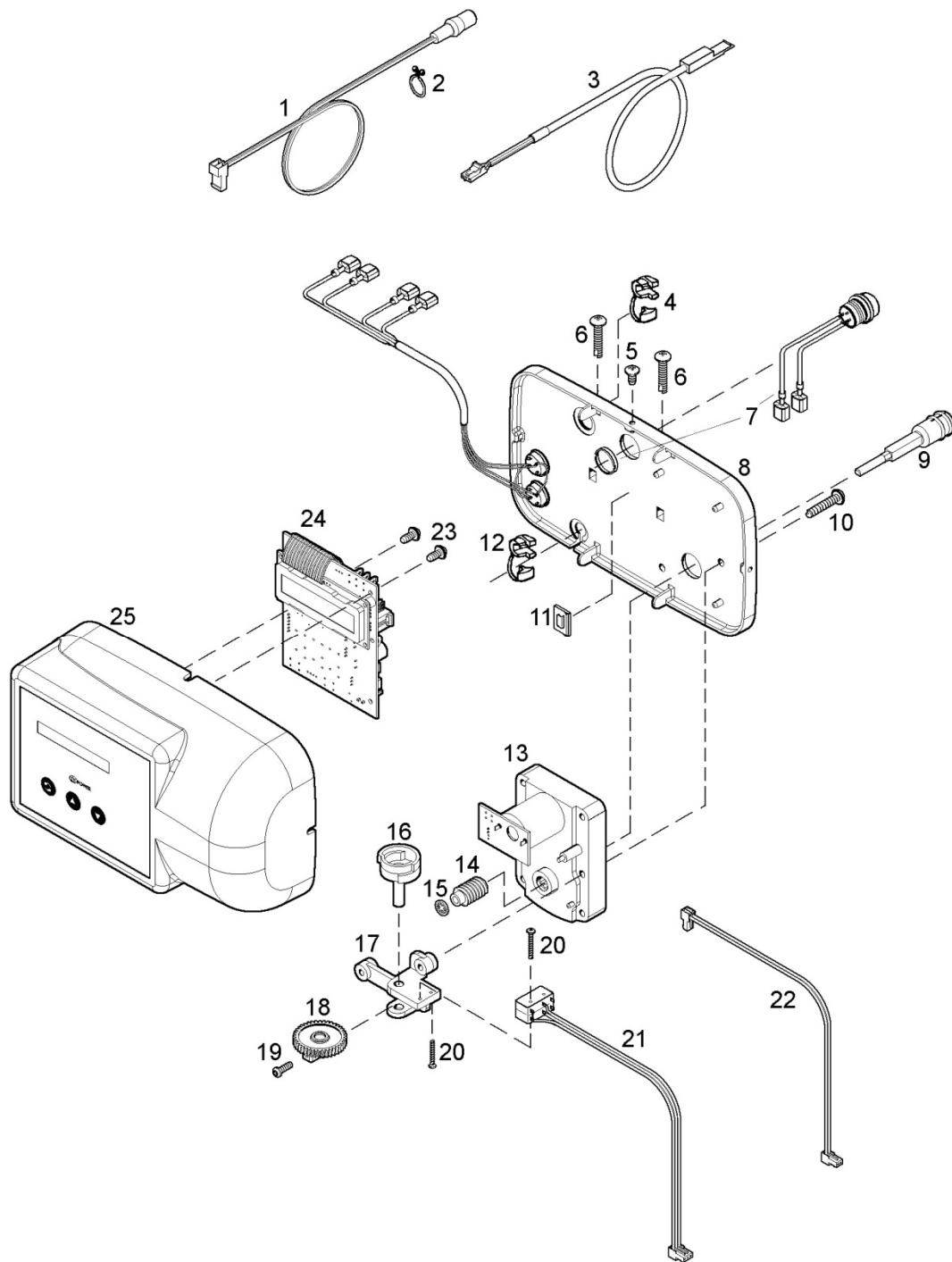


EXPLODED VIEW - TIMER HEAD - DUPLEX ALTERNATING

Item	PN	Description	Remark	(*)
1	70971	Power lead with plug		✓
2	72263	Clamp		
3	72519	Flow meter cable		✓
4	28/8/7	Strain relief, flow meter cable		
5	71502	Screw, timer cover (3x)		
6	15/222	Screw, back plate (2x)		
7	74135	Socket and cable assembly, Service Valve		
8	72369	Back plate		
9	2100/206	Drive shaft		
10	15/222	Screw, drive motor assy (2x)		
11	28/245/4	Cable clamp		
12	71502	Strain relief, power lead		
13	74105	Socket & cable assembly, ALT InterConnect		
14	72261	Drive motor		✓
15	568/227/2	Worm		
16	19/48	Retaining ring		
17	70965	Switch cam		
18	568/386	Bracket, micro switches		
19	568/310	Gear, switch cam		
20	15/184/7	Locking screw, switch cam		
21	15/173/12	Screw, micro switches (2x)		
22	72451	Micro switch assy		✓
23	71679	Cable set, drive motor		✓
24	15/102	Screw, PCB (2x)		
25	74167	Printed Circuit Board		✓
26	72614	Timer cover assembly		

(*) Recommended Spare Part

EXPLODED VIEW - TIMER HEAD - DUPLEX/TRIPLEX PARALLEL

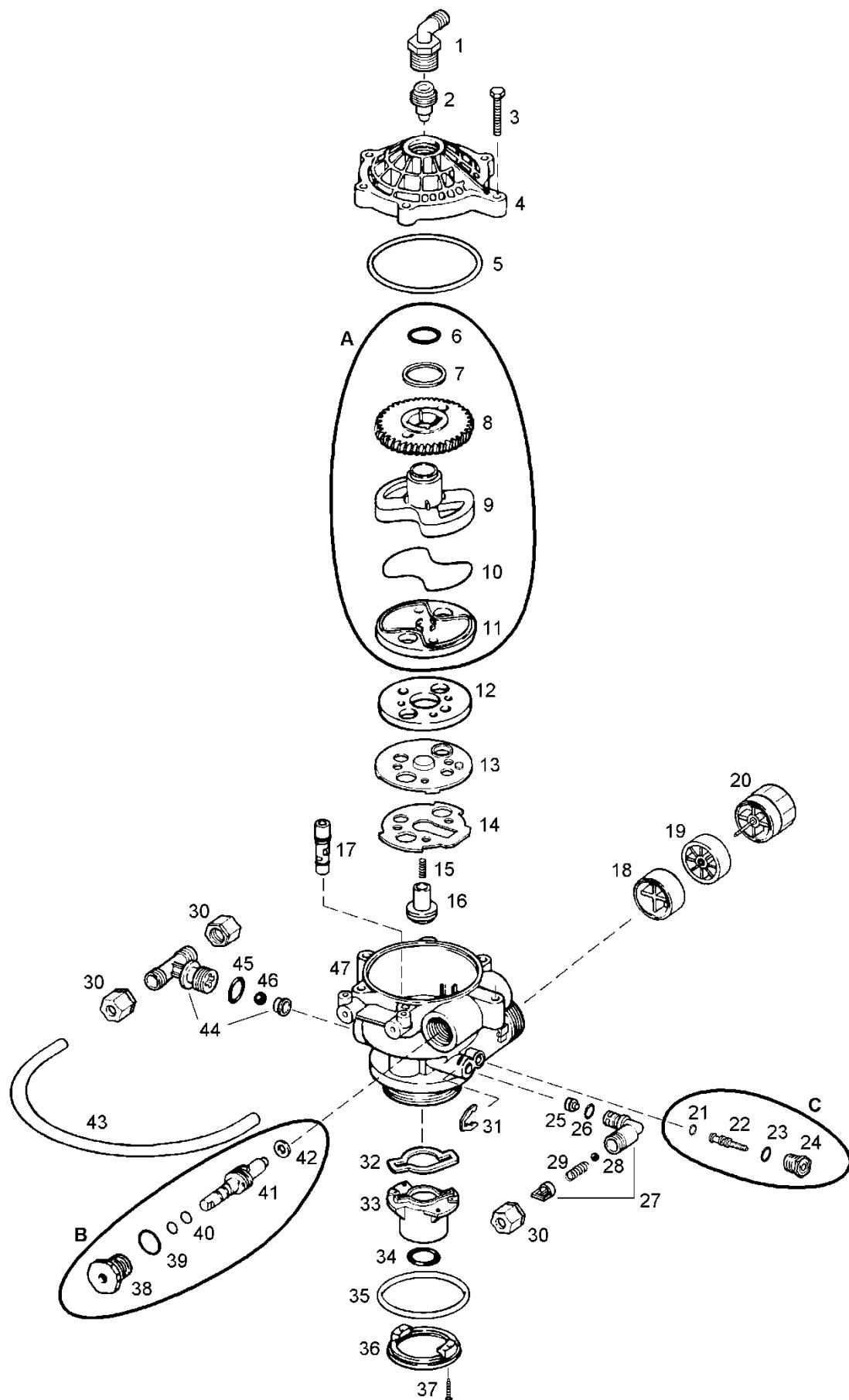


EXPLODED VIEW - TIMER HEAD - DUPLEX/TRIPLEX PARALLEL

Item	PN	Description	Remark	(*)
1	70971	Power lead with plug		✓
2	72263	Clamp		
3	72519	Flow meter cable		✓
4	28/8/7	Strain relief, flow meter cable		
5	71502	Screw, timer cover (3x)		
6	15/222	Screw, back plate (2x)		
7	74135	Socket and cable assembly, Service Valve		
8	74124	Back plate assembly (with socket & cable assembly, PRL InterConnect)		
9	2100/206	Drive shaft		
10	15/222	Screw, drive motor assy (2x)		
11	28/245/4	Cable clamp		
12	71502	Strain relief, power lead		
13	72261	Drive motor		✓
14	568/227/2	Worm		
15	19/48	Retaining ring		
16	70965	Switch cam		
17	568/386	Bracket, micro switches		
18	568/310	Gear, switch cam		
19	15/184/7	Locking screw, switch cam		
20	15/173/12	Screw, micro switches (2x)		
21	72451	Micro switch assy		✓
22	71679	Cable set, drive motor		✓
23	15/102	Screw, PCB (2x)		
24	74106	Printed Circuit Board		✓
25	72614	Timer cover assembly		

(*) Recommended Spare Part

EXPLODED VIEW - VALVE BODY



EXPLODED VIEW - VALVE BODY

Item	PN	Description	Remark	(*)
1	21/83	Drain connection		✓
2	568/271/J 568/271/K 568/271/L 568/271/M 568/271/N	Backwash flow control J (9,8 Ltr/min) Backwash flow control K (13,2 Ltr/min) Backwash flow control L (15,1 Ltr/min) Backwash flow control M (18,9 Ltr/min) Backwash flow control N (22,7 Ltr/min)	25 Ltr 50 Ltr 75 Ltr 100 Ltr 125 Ltr, 150 Ltr	
3	72678	Bolt, valve cover (6x)		
4	568/254/3	Valve cover		
5	185/154/1	O-ring, valve cover		
6	186/112	O-ring, Teflon		
7	72327	Washer, PE		
8	568/260	Worm gear		
9	568/259	Rotor cam		
10	185/041/1	O-ring, rotor		
11	568/345/2	Rotor plate		✓
12	568/256	Seal disk		✓
13	568/383	Insert plate		
14	568/384	Gasket		
15	413/62	Spring, float valve		
16	568/270/4	Float valve		
17	568/274/4 568/274/1 568/274/2	Injector (purple) Injector (red) Injector (yellow)	25 Ltr 50 Ltr, 75 Ltr 100 Ltr, 125 Ltr, 150 Ltr	
18	72458	Diffuser, impeller	Eco	
19	72544	Impeller	Eco	✓
20	72545	Hub, impeller	Eco	
21	185/007/6	O-ring, mixing valve		
22	568/406	Mixing valve		
23	186/118	O-ring, sleeve		
24	568/407/L	Sleeve, mixing valve		
25	568/385/2/B 568/385/2/D	Refill flow control 1,9 ltr/min Refill flow control 3,8 ltr/min	25 Ltr 50 Ltr, 75 Ltr, 100 Ltr, 125 Ltr, 150 Ltr	
26	186/118	O-ring, refill elbow		
27	568/336	Refill elbow		
28	541/275	Check ball, refill elbow		
29	413/62	Spring, refill elbow		
30	21/88	Nut, refill elbow/brine tee		
31	541/254	Spring clip		
32	570/251	Gasket, riser		
33	568/334	Riser insert		
34	185/214/1	O-ring, riser tube		
35	185/337/1	O-ring, tank		
36	541/232	Adapter ring		
37	15/207/12	Screw, adapter ring (2x)		
38	72772	Packing gland nut (plastic)		
39	185/211/1	O-ring, packing gland nut		
40	186/115	O-ring, worm drive shaft (2x)		
41	568/208/2	Worm drive shaft		
42	14/43	Washer, worm drive shaft		
43	EB64/33	Refill tube		
44	568/340	Brine Tee		✓
45	185/208/1	O-ring, brine tee		
46	26/47/12N	Check ball, brine tee		
47	72801	Valve body		
A	RK/568/259/2	Repair kit rotor		
B	RK/75154	Repair kit packing gland nut		
C	RK/568/406	Repair kit mixing valve		

(*) Recommended Spare Part

TECHNICAL DATA

Technical specifications:

Resin	25	50	75	100	125	150
Operating pressure min/max (bar)				1,4/8,3		
Operating temperature min/max (°C)				2/48		
Electrical connection (V/Hz)				230/50 ⁽¹⁾		
Max. power consumption (VA):	Simplex			12		
	Duplex			2x18		
	Triplex			3x18		
Hydraulic connection inlet/outlet				1" BSP Male		

(1) Supplied with 230/24V-50Hz transformer.

Performances @ 3 bar operating pressure and brining of 150 gr/Ltr of resin⁽²⁾:

The following specifications are for a Simplex system; for a Duplex Parallel system, these specifications have to be multiplied x2, for a Triplex Parallel system x3.

Resin	25	50	75	100	125	150
Nominal exchange capacity (m ³ x°f)	138	275	413	550	688	825
Nominal exchange capacity (m ³ x°d)	78	155	233	310	388	465
Salt usage per regeneration (kg)	3,7	7,5	11,3	15,0	18,8	22,5
Exchange capacity per kg salt (m ³ x°f)				37		
Exchange capacity per kg salt (m ³ x°d)				21		
Service flow rate @ 1 bar pressure drop (ltr/min) ⁽³⁾	56	57	58	58	62	60
Rinse water usage per regeneration (ltr)	165	285	400	540	670	780

(2) Indicative numbers, performances depending on operating conditions and water quality.

(3) For Duplex/Triplex Parallel: flow rates must be multiplied by x2/x3.

Dimensions and weights:

Model	Simplex					
	25	50	75	100	125	150
Resin						
Brine tank volume (ltr)	125	125	275	275	500	500
Brine tank diameter base/cover (mm)	470/540	470/540	575/685	575/685	800/875	800/875
Brine tank height (mm)	850	850	975	975	1.110	1.110
Tank & control valve depth (mm)	282	310	336	363	413	413
Tank & control valve depth, incl. factory bypass (mm)	371	376	389	403	428	428
Tank & control valve height (mm)	1.059 ±10	1.394 ±10	1.560 ±10	1.836 ±10	1.833 ±10	1.833 ±10
Height inlet/outlet (mm)	922 ±10	1.257 ±10	1.423 ±10	1.699 ±10	1.696 ±10	1.696 ±10
Max. salt storage capacity (kg)	100	100	200	200	475	475

Model	Duplex Alternating/Parallel					
	2 x 25	2 x 50	2 x 75	2 x 100	2 x 125	2 x 150
Resin						
Brine tank volume (ltr)	1 x 125	1 x 275	1 x 500	1 x 500	1 x 750	1 x 750
Brine tank diameter base/cover (mm)	470/540	575/685	800/875	800/875	950/1.030	950/1.030
Brine tank height (mm)	850	975	1.110	1.110	1.110	1.110
Tank & control valve depth (mm)	405	410	436	463	513	513
Tank & control valve height (mm)	1.059 ±10	1.394 ±10	1.560 ±10	1.836 ±10	1.833 ±10	1.833 ±10
Height inlet/outlet (mm)	922 ±10	1.257 ±10	1.423 ±10	1.699 ±10	1.696 ±10	1.696 ±10
Max. salt storage capacity (kg)	100	200	475	475	700	700

TECHNICAL DATA

Model	Triplex Parallel					
	3 x 25	3 x 50	3 x 75	3 x 100	3 x 125	3 x 150
Resin						
Brine tank volume (ltr)	3 x 125	3 x 125	3 x 275	3 x 275	3 x 500	3 x 500
Brine tank diameter base/cover (mm)	470/540	470/540	575/685	575/685	800/875	800/875
Brine tank height (mm)	850	850	975	975	1.110	1.110
Tank & control valve depth (mm)	405	410	436	463	513	513
Tank & control valve height (mm)	1.059 ±10	1.394 ±10	1.560 ±10	1.836 ±10	1.833 ±10	1.833 ±10
Height inlet/outlet (mm)	922 ±10	1.257 ±10	1.423 ±10	1.699 ±10	1.696 ±10	1.696 ±10
Max. salt storage capacity (kg)	3 x 100	3 x 100	3 x 200	3 x 200	3 x 475	3 x 475

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RPR/RPM Turnhout
BWT/TVA/VAT BE 0882.738.206

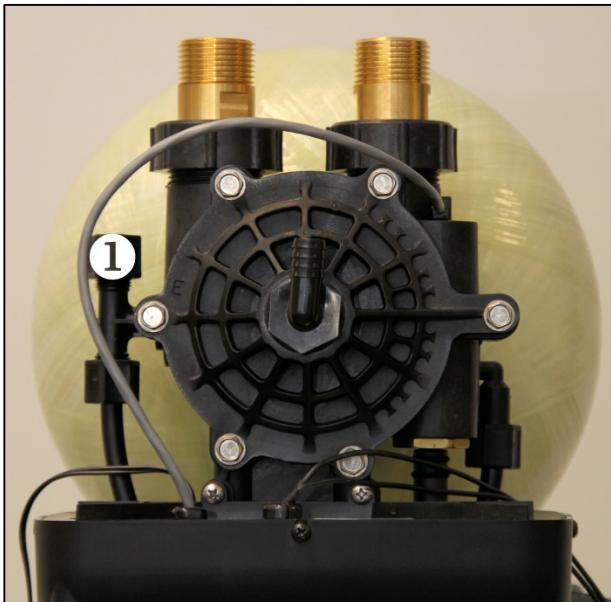
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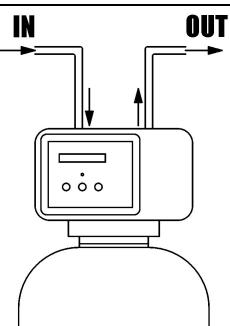
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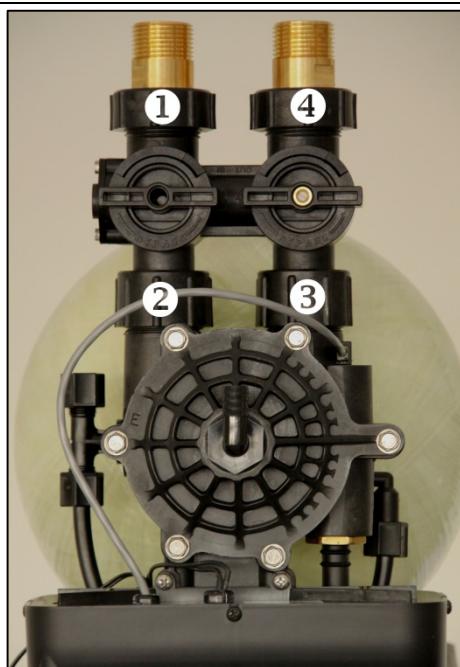
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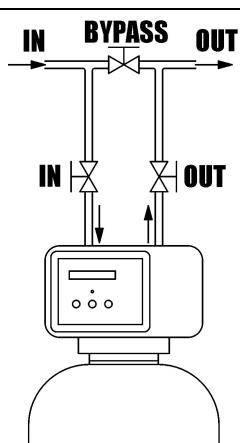
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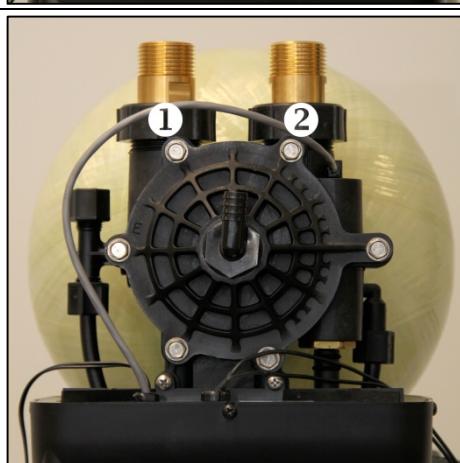
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3.a

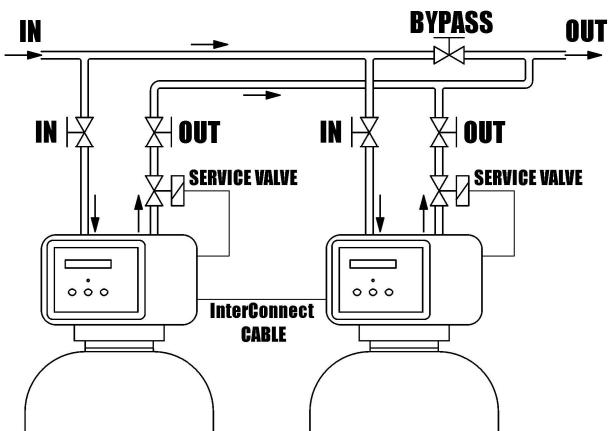


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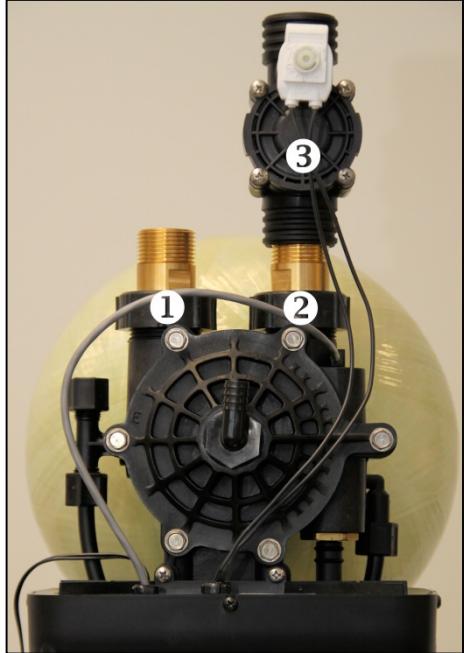




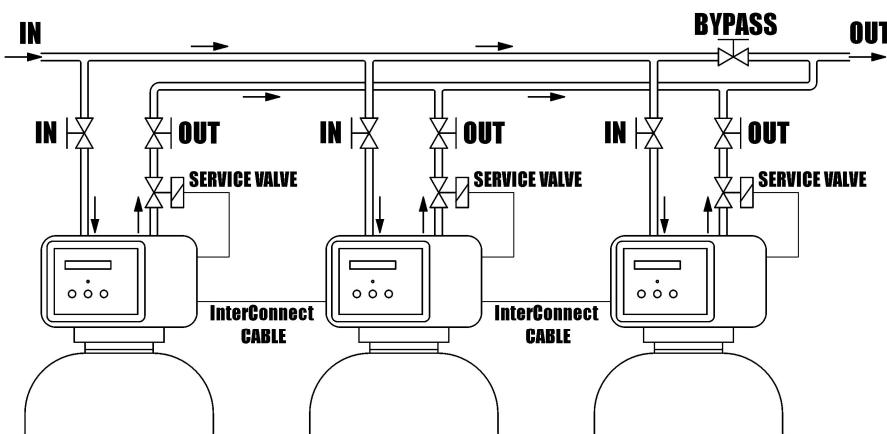
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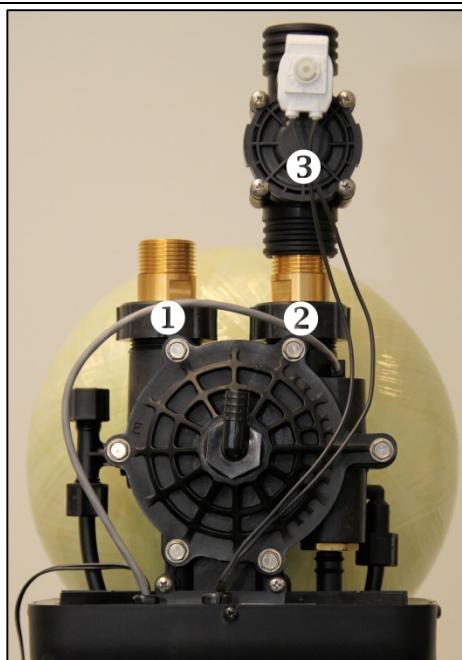
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5.a



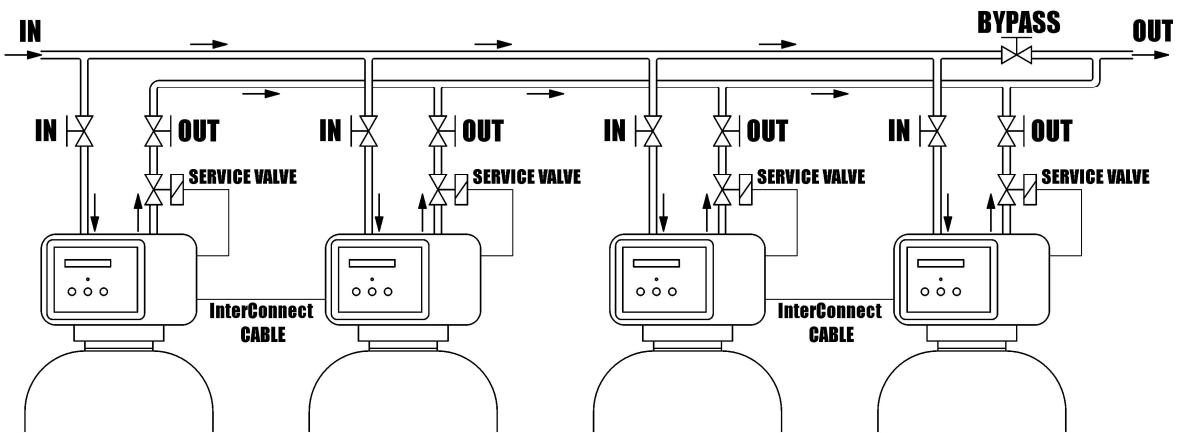
5.b



ProFlow



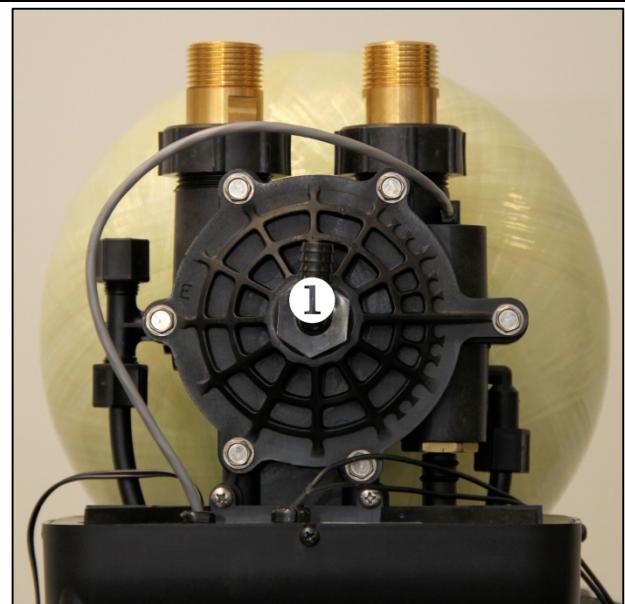
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7.a



7.b



8.a



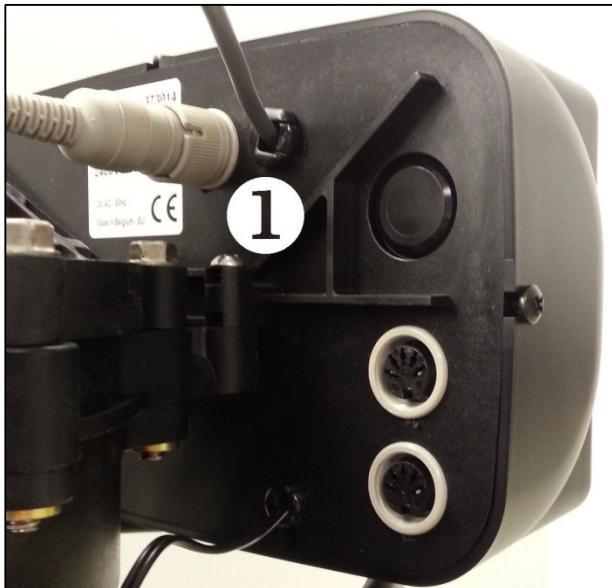
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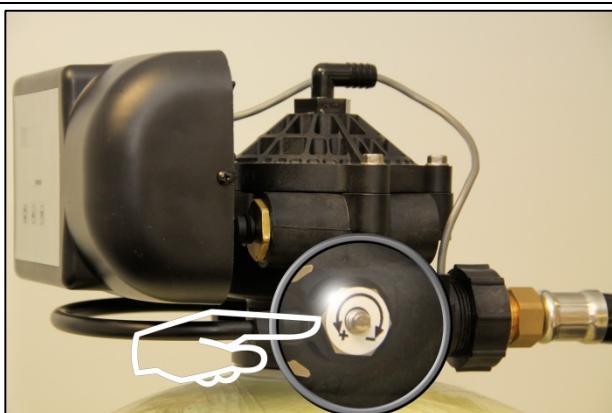
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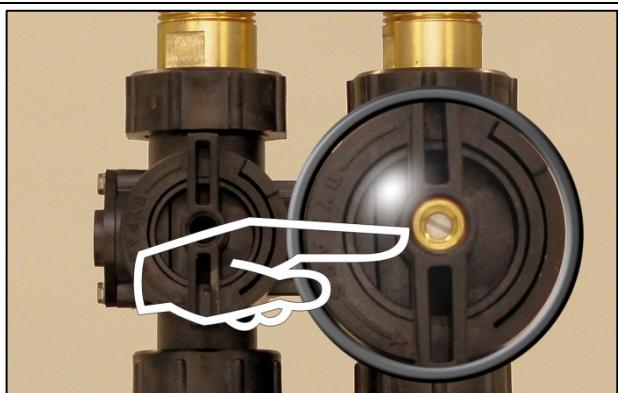
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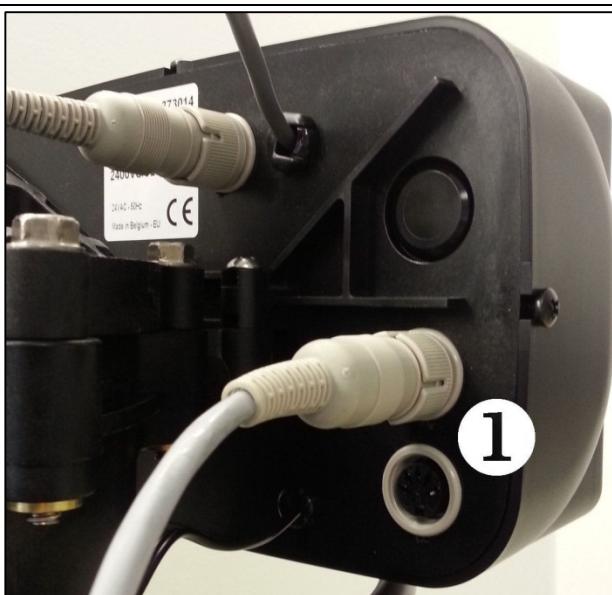
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11



12





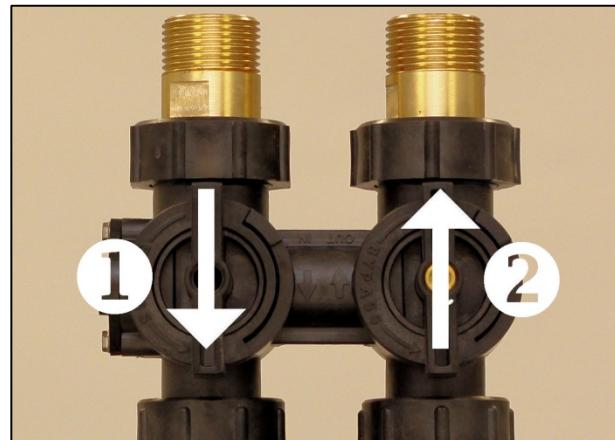
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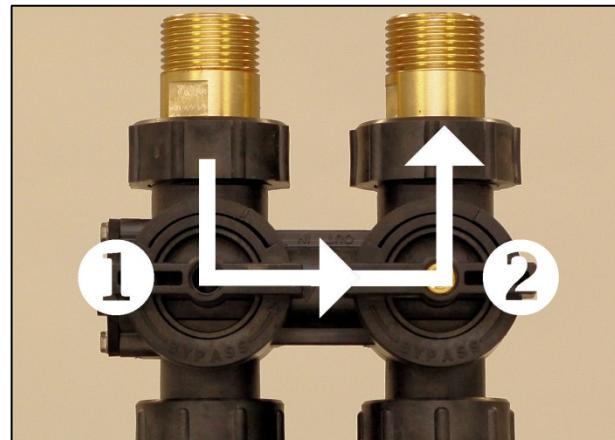
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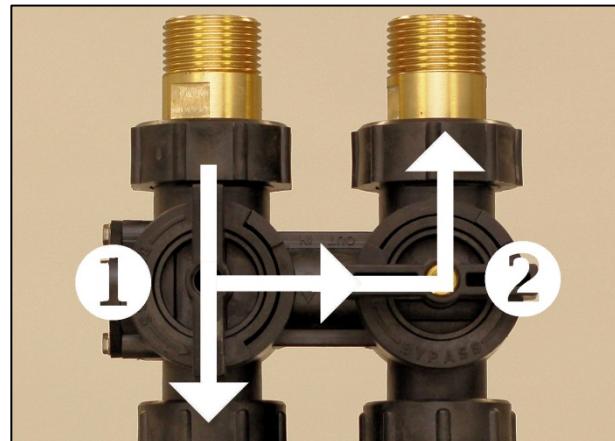
14.a



14.b



14.c





15

